

Response to Public Comments: 2002 Integrated Report

DEQ conducted a 60-day public comment period on the Policies and Procedures document and water body specific actions taken in Idaho's 2002 Integrated Report. 26-comment letters were received and DEQ most appreciates those that were provided online via DEQ's web based mapping project. Some comments came after the close of the comment period yet and all comments were considered and included.

The following 174-page table forms DEQ's response to comments regarding actions taken on the Draft 2002 Integrated Report and incorporated in the final 2002 Integrated Report. Comment 27 is DEQ internal comments reflecting updates/changes/ and/or corrections that occurred between the DRAFT and Final version of the 2002 Integrated Report. Any comments, which have no Assessment Unit identified, are comments relating to policy. In the table the reference to the "Temperature Package" directs the reader to DEQ's web site to view a collection of maps, spreadsheets and other supporting documents that prove to complex to contain in the format of this document. This package is in response to specific EPA comments in a letter dated August 14, 2003. Most of the information is contained here in Appendix A. Comments pertaining to two sets of Wilderness AUs have information supported by maps in Appendix B: Monumental Creek and Appendix C: Yellowjacket Creek.

DEQ found Comment Letter 20 from the Committee for the High Desert to be exceedingly burdensome. The Committee did not reference Assessment Units (AU). AUs are the key DEQ's geographically based reference system and are supported by an extensive online mapping project to facilitate clear and rapid comment and communication. The Committee referenced place names that lead to geographic uncertainty. DEQ spent over 3 months responding to this single comment letter. DEQ cannot exhaust these kinds of resources in the future. It is important, as DEQ noted, for comments to provide locational information, specifically AUs, so DEQ can appropriately respond to the comment. This level of effort for a single comment letter cannot be maintained. In future reporting cycles all correspondence needs to reference assessment units in order for DEQ to respond.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050121SW007_02	Silver Creek 1 st & 2 nd	DEQ	97SWIROA72 = FS	Tier I Data = FS (Section 2).
ID17040205SK020_04	Grays Lake Outlet	DEQ	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Agree.
ID17060201SL015_02	Garden Creek - source to mouth	DEQ	This comment applies to the entire assessment unit. Garden Creek was determined, in the 2003 Upper Salmon River Subbasin Assessment, to fully support its aquatic life beneficial uses above the City of Challis. From the City of Challis to its confluence with the Salmon River it is impaired by habitat alteration and flow alteration. Over this segment it should be placed in category 4C. Above the boundary it is in full support and should not be 303(d) listed.	Agree.
ID17060201SL020_02	Kinnikinic Creek - source to mouth	DEQ	This comment applies to the entire assessment unit. Kinnikinic Creek has received Best Management Plan implementation in 2001. Streambank sloping, channel reconstruction, revegetation, erosion control, restoration of flow, are remedies for mass wasting, and windborn deposition of sediment from tailings piles that have resulted from historic mining. Monitoring has indicated that there has been much improvement in riparian and aquatic life conditions over the area of disturbance. Kinnikinic Creek was identified in the Upper Salmon River Subbasin Assessment and TMDL as being in post-implementation recovery and should appropriately be placed in category 4B. It is in full support of aquatic life beneficial uses above the Clayton Silver Mine, which has been the historic source of impairment.	Agree.
ID17060201SL028_02	Thompson Creek	DEQ	This comment applies to the entire assessment unit. Thompson Creek has received Best Management	Agree.

AUs	Waterbody Name	Commentor	Comments	Responses
			<p>Plan implementation adjacent to the Scheelite Jim Mill prior to 303(d) listing. Streambank sloping, artificial wetland construction to remove contaminants, channel reconstruction, revegetation, and erosion control, are remedies for precipitation of iron oxide and manganese oxide from tailings piles that have resulted from historic mining and milling. Monitoring has indicated that there has been much improvement in riparian and aquatic life conditions over the area of disturbance. Thompson Creek was identified in the Upper Salmon River Subbasin Assessment and TMDL as being in post-implementation recovery and should appropriately be placed in category 4B. It is in full support of aquatic life beneficial uses above the Scheelite Jim Mill which has been the historic source of impairment to the stream. The Thompson Creek Mine is governed under a discrete Plan of Operation that provides for permitting of NPDES Permits and monitoring of mining operations and water quality. Thompson Creek should appropriately be placed in section 4B from the Scheelite Jim Millsite downstream and section 4C from Buckskin Creek to the Scheelite Jim Millsite. It is in Full Support of Aquatic Life Beneficial Uses above the confluence of Buckskin Creek, which is above the influence of the Thompson Creek Mine, and this segment should be removed from the 303(d) list.</p>	
ID17060201SL028_03	Thompson Creek	DEQ	<p>This comment applies to the entire assessment unit. Thompson Creek has received Best Management Plan implementation adjacent to the Scheelite Jim Mill prior to 303(d) listing. Streambank sloping, artificial wetland construction to remove contaminants, channel reconstruction, revegetation, and erosion control, are remedies for precipitation of</p>	Agree.

AUs	Waterbody Name	Commentor	Comments	Responses
			<p>iron oxide and manganese oxide from tailings piles that have resulted from historic mining and milling. Monitoring has indicated that there has been much improvement in riparian and aquatic life conditions over the area of disturbance. Thompson Creek was identified in the Upper Salmon River Subbasin Assessment and TMDL as being in post-implementation recovery and should appropriately be placed in category 4B. It is in full support of aquatic life beneficial uses above the Scheelite Jim Mill which has been the historic source of impairment to the stream. The Thompson Creek Mine is governed under a discrete Plan of Operation that provides for permitting of NPDES Permits and monitoring of mining operations and water quality. Thompson Creek should appropriately be placed in section 4B from the Scheelite Jim Millsite downstream and section 4C from Buckskin Creek to the Scheelite Jim Millsite. It is in Full Support of Aquatic Life Beneficial Uses above the confluence of Buckskin Creek, which is above the influence of the Thompson Creek Mine, and this segment should be removed from the 303(d) list.</p>	

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060201SL051_02	Thompson Creek	DEQ	<p>This comment applies to the entire assessment unit. Thompson Creek has received Best Management Plan implementation adjacent to the Scheelite Jim Mill prior to 303(d) listing. Streambank sloping, artificial wetland construction to remove contaminants, channel reconstruction, revegetation, and erosion control, are remedies for precipitation of iron oxide and manganese oxide from tailings piles that have resulted from historic mining and milling. Monitoring has indicated that there has been much improvement in riparian and aquatic life conditions over the area of disturbance. Thompson Creek was identified in the Upper Salmon River Subbasin Assessment and TMDL as being in post-implementation recovery and should appropriately be placed in category 4B. It is in full support of aquatic life beneficial uses above the Scheelite Jim Mill which has been the historic source of impairment to the stream. The Thompson Creek Mine is governed under a discrete Plan of Operation that provides for permitting of NPDES Permits and monitoring of mining operations and water quality. Thompson Creek should appropriately be placed in section 4B from the Scheelite Jim Millsite downstream and section 4C from Buckskin Creek to the Scheelite Jim Millsite. It is in Full Support of Aquatic Life Beneficial Uses above the confluence of Buckskin Creek, which is above the influence of the Thompson Creek Mine, and this segment should be removed from the 303(d) list.</p>	Agree.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060201SL073_05	Salmon River - Alturas Lake Creek to Fisher Creek	DEQ	This comment applies to the entire assessment unit. The Salmon River was evaluated by USGS in October 1999 as part of the 2001 Middle Salmon River - Panther Creek and 2003 Upper Salmon River Subbasin Assessment and TMDL. Based on the fish community the Salmon River was determined to fully support its aquatic life beneficial uses. This issue was addressed in the 2001 Upper Salmon River Subbasin Assessment and TMDL. The Salmon River should be appropriately placed in Section 1.	Agree.
ID17060201SL075_02	Alturas Lake Creek - Alturas Lake to mouth	DEQ	This comment applies to the selected stream segment. Alturus Lake Creek is a lake outlet with no identifiable sediment sources or thermal loading sources other than Alturus Lake during July and August. As such it should not be listed as impaired. The map associated with this assessment unit does not correctly identify Alturus Lake Creek. Alturus Lake Creek above the Lake, and Alturus Lake are in full support of aquatic life beneficial uses. The listing of Alturus Lake Creek is in error and should be removed from the list of impaired waters.	Agree.
ID17060201SL125_03	Road Creek - source to Corral Basin Creek	DEQ	This comment applies to the selected stream segment. Road Creek has been under improved grazing management by the Bureau of Land Management-Challis Field Office since 1996. Riparian conditions are optimal and streambank stability is improving. Fish communities are intact and are full support over this segment. Road Creek was identified in the Upper Salmon River Subbasin Assessment and TMDL as being in post-implementation recovery, in full support of its aquatic life beneficial uses and should appropriately be placed in category 4B.	Agree.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060202SL034_03	Patterson Creek - Inyo Creek to mouth	DEQ	This comment applies to the selected stream segment. Patterson Creek is entirely diverted below the mouth of the canyon and there is not return flow to the natural channel. Patterson Creek is in full support of aquatic life beneficial uses above the confluence of Inyo Creek. It was identified in the 2001 Pahsimeroi River Subbasin Assessment and TMDL as impaired by flow alteration and should be moved to the appropriate category 4C.	Agree.
ID17060202SL034_04	Patterson Creek - Inyo Creek to mouth	DEQ	This comment applies to the entire assessment reach. Patterson Creek is entirely diverted below the mouth of the canyon and there is not return flow to the natural channel. Patterson Creek is in full support of aquatic life beneficial uses above the confluence of Inyo Creek. It was identified in the 2001 Pahsimeroi River Subbasin Assessment and TMDL as impaired by flow alteration and should be moved to the appropriate category 4C.	Agree.
ID17060202SL037_03	Morse Creek - Irrigation junction to mouth	DEQ	This comment applies to the selected stream segment. Morse Creek is entirely diverted at the mouth of the canyon and there is not return flow to the natural channel. Morse Creek is in full support of aquatic life beneficial uses above the diversion. It was identified in the 2001 Pahsimeroi River Subbasin Assessment and TMDL as impaired by flow alteration and should be moved to the appropriate category 4C.	Agree.

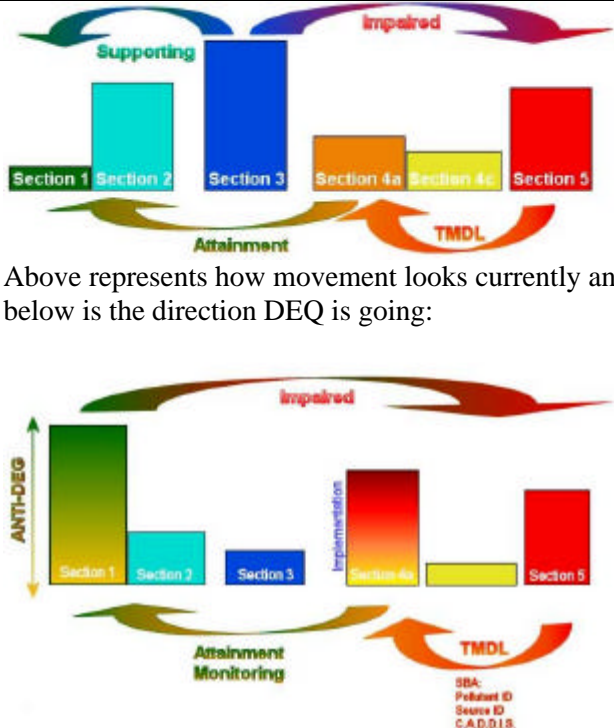
AUs	Waterbody Name	Commentor	Comments	Responses
ID17060202SL039_03	Morgan Creek - source to mouth	DEQ	This comment applies to the selected stream segment. Morgan Creek is entirely diverted at the mouth of the canyon and there is not return flow to the natural channel. Morgan Creek is in full support of aquatic life beneficial uses above the diversion. It was identified in the 2001 Pahsimeroi River Subbasin Assessment and TMDL as impaired by flow alteration and should be moved to the appropriate category 4C.	Agree.
ID17060203SL	Salmon River	DEQ	This comment applies to the selected stream segment. The Salmon River was evaluated by USGS in October 1999. Based on the fish community the Salmon River was determined to fully support its aquatic life beneficial uses. This issue was addressed in the 2001 Middle Salmon River - Panther Creek Subbasin Assessment and TMDL.	Agree.
ID17060203SL	Salmon River	DEQ	This comment applies to the selected stream segment. The Salmon River was evaluated by USGS in October 1999. Based on the fish community the Salmon River was determined to fully support its aquatic life beneficial uses. This issue was addressed in the 2001 Middle Salmon River - Panther Creek Subbasin Assessment and TMDL.	Agree.
ID17060203SL002_05	Panther Creek	DEQ	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Agree.
ID17060203SL009_02	Bucktail Creek - source to mouth	DEQ	Bucktail Creek has had a Use Attainability Assessment completed by the Department of Environmental Quality and should be placed in Category 4B.	Agree.
ID17060203SL010_05	Panther Creek	DEQ	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Agree.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060203SL011_02	Panther Creek - Blackbird Creek to Napias Creek	DEQ	This comment applies to the selected stream segment. Panther Creek from the confluence of Blackbird Creek to Napias Creek is included under a CERCLA action that is in process to identify appropriate remediation actions, load reductions, implementation projects, implementation monitoring and fisheries restoration projects. A TMDL will not be developed until such Agreements are reached and implementation/monitoring shows a definitive need for additional load allocations based on aquatic life beneficial use support status. This stream should be placed in Category 4B.	Agree.
ID17060203SL012b_02	Blackbird Creek - Blackbird Reservoir Dam to mouth	DEQ	This comment applies to just the selected stream segment. Blackbird Creek has had a Use Attainability Assessment completed by the Department of Environmental Quality and should be placed in Category 4B.	Agree.
ID17060203SL038_03	Dump Creek – Moose Creek to mouth	DEQ	The following river segment description may be in error: This comment applies to the selected stream segment. Dump Creek has received Best Management Plan implementation prior to it's 303(d) listing. Streambank sloping, revegetation, erosion control, and diversion of peak flow into Moose Creek are remedies for mass wasting that has resulted from historic hydraulic mining. Monitoring has indicated that there has been much improvement in riparian and aquatic life conditions below the area of disturbance. Dump Creek was identified in the Middle Salmon River-Panther Creek TMDL as being in post-implementation recovery and should appropriately be placed in category 4B	Agree.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060203SL053_07	Salmon River - Pahsimeroi River to Iron Creek	DEQ	This comment applies to the entire assessment unit. The Salmon River was evaluated by USGS in October 1999 as part of the 2001 Middle Salmon River - Panther Creek Subbasin Assessment and TMDL. Based on the fish community the Salmon River was determined to fully support its aquatic life beneficial uses. This issue was addressed in the 2001 Middle Salmon River - Panther Creek Subbasin Assessment and TMDL.	Agree.
ID17060204SL001_06	Lemhi River	DEQ	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Approved Bacteria TMDL; Move to section 4a.
ID17060204SL017_02	Short Creek	DEQ	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	AU should be listed as “not assessed.”
ID17060204SL024_05	Lemhi River	DEQ	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Approved Bacteria TMDL; Move to section 4a.
ID17060205SL014_02	Sheep Trail Creek	DEQ	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Agree.
ID17060205SL015_02	Cub Creek	DEQ	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Agree.
ID17060205SL016_03	Cache Creek	DEQ	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Agree.
ID17040209SK009_02 HUC 17040209	South Fork Rock Creek	DEQ	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Previously on the 1998 303(d) list; The stream will be in Section 5 of the Integrated Report until Tier 1 data show that the stream is in full support of its beneficial uses and that no water quality criteria violations exist.
ID17040211SK010_03 HUC 17040211	Blue Hill Creek	DEQ	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Previously on the 1998 303(d) list; The stream will be in Section 5 of the Integrated Report until Tier 1 data show that the stream is in full support of its beneficial uses and that no water quality criteria violations exist.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17040213SK016_02 HUC 17040213	Hopper Gulch	DEQ	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	This AU is present in Section 5.
ID17060305CL006_03	Stockney Creek	DEQ	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Stockney Creek was evaluated in the Cottonwood Creek TMDL and approved by EPA 6-6-00. This AU will be listed in Section 4a.
ID17060306CL026_04	Lolo Creek	DEQ	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Tier 1 data indicate Full Support. 1997 tribal monitoring data indicate good habitat and a strong aquatic community.
ID17060306CL041_03	Bedrock Creek	DEQ	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Agree. This AU appears in Section 5.
ID17060306CL066_02	Catholic Creek	DEQ	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	This AU appears in Section 5.
		EPA	<p>Waters Removed or not listed sole due to “a priori natural” (6 waters) Comment: While DEQ provided a brief reason for the water to be excluded in the table, there is not adequate information for EPA to determine and document whether the de-listing is appropriate.</p> <p>Suggestion: EPA requests additional information about DEQ’s rationale for not including specific waters in Section 5 (303(d) list). For each stream DEQ proposes to not list due to “a priori natural,” EPA requests DEQ provide a waterbody-specific summary of the factors DEQ considered in deciding the water should not be listed. This request is consistent with the implementation plan (Mebane and Essig, 2003) that accompanied the natural condition-related water quality standards revisions submitted to EPA.</p>	Please see Temperature package.

AUs	Waterbody Name	Commentor	Comments	Responses
		EPA	<p>Waters Removed or Not listed due to frequency of exceedance being less than assessment threshold (8 waters)</p> <p>Comment: The reason for not listing in this circumstance is very brief. EPA acknowledges that DEQ explains how DEQ determines temperature criteria exceedance in WBAG II and the list methodology. However, there is not adequate information for EPA to determine and document whether the de-listings are appropriate for these specific water bodies.</p> <p>Suggestion: EPA requests DEQ include a summary of how many samples there were and how many exceeded criteria. DEQ may do this in a table format (such as the one suggested in the comments below), using a “Supporting data,” or similarly titled column.</p>	Please see Temperature package.
		EPA	<p>Tracking Changes from the 1998 List and the 2002 Integrated Report :</p> <p>Comment: The format of 303(d) listing has changed since 1998. In response to EPA guidance entitled, “2002 Integrated Report Guidance (dated November 19, 2001),” DEQ developed a five part Integrated Report, began reporting Assessment Units (AUs) and began using National Hydrography Database (NHD) and Assessment Database (ADB) to submit Integrated Reports. With the many changes, it may be difficult to follow a waterbody from the 1998 to the 2002 303(d) list.</p>	A crosswalk will be provided in the submittal package and will be posted on the Web upon EPA approval.
		EPA	<p>Description of How Waters Move Between Categories</p> <p>Comment: On page 18 (Section 17. De-listed Waters) of its list methodology, DEQ explains how waters previously listed in 1998 may be moved to</p>	Agree. EPA has viewed a draft of this flow chart similar to below:

AUs	Waterbody Name	Commentor	Comments	Responses
			<p>Category 2 (meets Water Quality Standards for some uses and not threatened for any use) if newer data showed the WQS are met. However, DEQ does not mention whether there are other reasons for a water to be de-listed. One other reason for waters moving from one category to another is “TMDL approved.”</p> <p>Suggestion: In its 2004 guidance, DEQ may consider adding a flow chart for how waters move between categories and adding a description for how waters move to other categories, such as to 4a and 4c or from category 3.</p>	 <p>Above represents how movement looks currently and below is the direction DEQ is going:</p>
		EPA	<p>Waters Removed or Not listed due to not meeting minimums in Idaho’s WBAG II (3 waters)</p> <p>Comment: EPA appreciates the detailed description of how DEQ determines temperature criteria exceedance in WBAG II and the list methodology. Previously, DEQ’s practice regarding how to determine temperature exceedances was not clearly communicated. Thus, in 1998, EPA listed these three waters due to one grab sample exceeding criteria.</p> <p>Suggestion: EPA recommends DEQ include a column in the table to indicate to which category/section the waterbody will be placed for the 2002 Integrated Reporting Cycle</p>	Please see Temperature package.

AUs	Waterbody Name	Commentor	Comments	Responses
		EPA	DEQ has experienced database programming errors, which have impacted the way the report displays the information. We understand that it is not a data problem, but a report display problem, and that DEQ is now working to reconcile this problem. EPA and DEQ discussed that, in the event that they are unable to fix this in a timely fashion, DEQ would provide Region 10 an alternate spreadsheet, such as TMDL tracking spreadsheet.	This programming error mainly affected Section 4a, especially with regard to Flow and Habitat Alteration, but has since been resolved. If this section is found to have errors, the "Region X TMDL Completed Spreadsheet" maintained by EPA and DEQ functionality replaces it by default.
		EPA	During the aforementioned July 31, 2003 meeting, DEQ reported 4 waters in the state do not have accurate representation in the NHD at the 1:24,000 scale. EPA acknowledges this is a problem experienced nationwide. DEQ is working with EPA to resolve this. Some options discussed were submitting a textual description of where these waters are located or manually recording the water into NHD. EPA requests DEQ briefly explain how these difficulties are resolved in its comment responsiveness summary.	This problem exists at the 1:100,000 scale and applies only to one small tributary to an AU listed in Section 5.
		EPA	Status of Previously listed waters: DEQ acknowledged an error occurred while using the assessment database to track previously listed waters. In the data base, waters are assigned a value: a very low negative number if it is impaired and a positive number (usually +1) if it is not impaired. Thus every water should have a value above or below 0. However, a few waters did not have positive or negative numbers (had 0s), which indicated that critical information was not provided by regional office staff. Mike Edmondson is working with regional staff to reconcile these errors and will provide a table to show how he did so.	This has been resolved and all segments are accounted for.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060206SL012_02	Monumental Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Monumental Creek should be evaluated for impacts from the Dewey Mine	Section 5 (as in 1998 list).
ID17060206SL012_03	Monumental Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Monumental Creek should be evaluated for impacts from the Dewey Mine	Section 5 (as in 1998 list).
ID17060206SL012_04	Monumental Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Monumental Creek should be evaluated for impacts from the Dewey Mine	Section 5 (as in 1998 list).
ID17060206SL014_02	WF of Monumental Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Monumental Creek should be evaluated for impacts from the Dewey Mine	Section 1 Wilderness; Different watershed from the Dewey Mine.
ID17060206SL012_02	Monumental Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Monumental Creek should be evaluated for impacts from the Dewey Mine	See Monumental Creek Map (attached) and/or ADB.
ID17060206SL012_03	Monumental Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Monumental Creek should be evaluated for impacts from the Dewey Mine	See above.
ID17060206SL012_04	Monumental Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Monumental Creek should be evaluated for impacts from the Dewey Mine	See above.
ID17060206SL014_02	WF of Monumental Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Monumental Creek should be evaluated for impacts from the Dewey Mine	See above.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060206SL037_03	Yellowjacket Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Yellowjacket Creek should be evaluated for impacts from the extensive Yellowjacket Mine	See Yellow Jacket Creek Map (attached) and/or ADB.
ID17060206SL038_03	Yellowjacket Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Yellowjacket Creek should be evaluated for impacts from the extensive Yellowjacket Mine	See above.
ID17060206SL039_03	Yellowjacket Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Yellowjacket Creek should be evaluated for impacts from the extensive Yellowjacket Mine	See above.
ID17060206SL041_03	Yellowjacket Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Yellowjacket Creek should be evaluated for impacts from the extensive Yellowjacket Mine	See above.
ID17060206SL043_02	Yellowjacket Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Yellowjacket Creek should be evaluated for impacts from the extensive Yellowjacket Mine	See above.
ID17060206SL043_03	Yellowjacket Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Yellowjacket Creek should be evaluated for impacts from the extensive Yellowjacket Mine	See above.
ID17060206SL012_02	Monumental Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Monumental Creek should be evaluated for impacts from the Dewey Mine	This AU is not supporting its uses and is in Section 5.
ID17060206SL012_03	Monumental Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Monumental Creek should be evaluated for impacts from the Dewey Mine	This AU is not supporting its uses and is in Section 5.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060206SL012_04	Monumental Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Monumental Creek should be evaluated for impacts from the Dewey Mine	Lower Monumental Creek is supporting all of its uses.
ID17060206SL014_02	WF of Monumental Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Monumental Creek should be evaluated for impacts from the Dewey Mine	This AU is not downstream of current or historic mines. This AU is the headwaters and 2 nd order tributaries to the West Fork of Monumental Creek. The small creeks that comprise the tributaries to the West Fork of Monumental Creek are wholly contained in the Wilderness and do not have any private inholdings or roads.
ID17060206SL037_03	Yellowjacket Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Yellowjacket Creek should be evaluated for impacts from the extensive Yellowjacket Mine	This unit is fully supporting its beneficial uses, is wholly contained in the wilderness, and is not downstream of current or historic mines.
ID17060206SL038_03	Yellowjacket Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Yellowjacket Creek should be evaluated for impacts from the extensive Yellowjacket Mine	This AU is not assessed.
ID17060206SL039_03	Yellowjacket Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Yellowjacket Creek should be evaluated for impacts from the extensive Yellowjacket Mine	This AU is not assessed.
ID17060206SL041_03	Yellowjacket Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Yellowjacket Creek should be evaluated for impacts from the extensive Yellowjacket Mine	This AU is not assessed.
ID17060206SL043_02	Yellowjacket Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Yellowjacket Creek should be evaluated for impacts from the extensive Yellowjacket Mine	This AU has been assessed as Full Support.
ID17060206SL043_03	Yellowjacket Creek	1	Waterbodies that these are downstream from previous and/or current mining activity. Yellowjacket Creek should be evaluated for impacts from the extensive Yellowjacket Mine	This AU has been assessed as Full Support.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060304CL002_04T	Clear Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See policy response to comment in policy section for Commentor #1.
ID17060304CL011_03T	Maggie Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See above.
ID17060305CL001_05T	South Fork of the Clearwater River	1	sediment impairment in the tributaries	The tributaries are not part of the ID17060305CL001_05T AU. Sediment is listed in ID17060305CL001_05 AU. This AU has been evaluated in the SF Clearwater SBA and TMDL (2002). The Fish TAG ID Spring Chinook as spawning in the lower main stem during temp critical times of year. Temperature exceeds criteria for SS and CWB.
ID17060305CL012_05T	South Fork of the Clearwater River	1	sediment impairment in the tributaries	The tributaries are not part of the ID17060305CL012_05 AU. Sediment is listed in ID17060305CL001_05 AU. This AU has been evaluated in the SF Clearwater SBA and TMDL (2002). The Fish TAG ID Spring Chinook as spawning in the lower main stem during temp critical times of year. Temperature exceeds criteria for SS and CWB.
ID17060306CL002_07T	Portions of the Clearwater River	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See policy response to comment in policy section for Commentor #1.
ID17060306CL002_07T	Catholic Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See above.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060306CL004_05T	Lapwai Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See above.
ID17060306CL005_04T	Sweetwater Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See above.
ID17060306CL005_04T	Sweetwater Creek	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This AU appears in Section 3 as ID17060306CL005_04.
ID17060306CL006_04T	Sweetwater Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See policy response to comment in policy section for Commentor #1.
ID17060306CL006_04T	Sweetwater Creek	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This AU appears in Section 3 as ID17060306CL006_04.
ID17060306CL007_02T	Webb Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See policy response to comment in policy section for Commentor #1.
ID17060306CL007_02T	Webb Creek	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This AU appears in Section 5 as ID17060306CL007 and is carried forward from the 1994 303(d) list.
ID17060306CL008_03T	Lapwai Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See policy response to comment in policy section for Commentor #1.
ID17060306CL008_04T	Lapwai Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See above.
ID17060306CL009_03T	Lapwai Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See above.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060306CL010_02T	Lapwai Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See above.
ID17060306CL010_03T	Lapwai Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See above.
ID17060306CL011_02T	Mission Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See above.
ID17060306CL011_02T	Mission Creek	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This AU appears in Section 3 as ID17060306CL011_02.
ID17060306CL011_03T	Mission Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See policy response to comment in policy section for Commentor #1.
ID17060306CL011_03T	Mission Creek	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This AU appears in Section 2 as ID17060306CL011_03.
ID17060306CL013_03T	Portions of the Clearwater River	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See policy response to comment in policy section for Commentor #1.
ID17060306CL013_07T	Portions of the Clearwater River	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See above.
ID17060306CL013_07T	Bedrock Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See above.
ID17060306CL013_07T	Bedrock Creek	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This AU appears in Section 5 as ID17060306CL013_07 listed for Total Dissolved Gas.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060306CL013_08T	Portions of the Clearwater River	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See policy response to comment in policy section for Commentor #1.
ID17060306CL014_02T	Cottonwood Creek (Nez Perce County)	1	First, the 2002/2003 Draft Integrated Report incorrectly states, "[T]he status of AU's within the Reservation boundary was maintained with respect to the 1998 § 303 (d) list unless there was an EPA approved TMDL".	The 2 nd Order of WBID CL014 did not appear on the 1998 303(d) list. This AU now appears in Section 3 as ID17060306CL014_02.
ID17060306CL014_02T	Cottonwood Creek (Nez Perce County)	1	Second, the Tribe requests that reference be removed to waterbodies wholly contained within the exterior boundaries of the Reservation from Sections 1 through 5 of the report in addition to the web site maps. Again, these waterbodies are outside the scope of IDEQ's Clean Water Act authority	This AU appears in Section 3. See policy response to comment in policy section for Commentor #1.
ID17060306CL014_02T	Cottonwood Creek (Nez Perce County)	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This AU appears in Section 3.
ID17060306CL014_03T	Cottonwood Creek (Nez Perce County)	1	First, the 2002/2003 Draft Integrated Report incorrectly states, "[T]he status of AU's within the Reservation boundary was maintained with respect to the 1998 § 303 (d) list unless there was an EPA approved TMDL".	The 3 rd Order of WBID CL014 did not appear on the 1998 303(d) list. This AU now appears in Section 3.
ID17060306CL014_03T	Cottonwood Creek (Nez Perce County)	1	Second, the Tribe requests that reference be removed to waterbodies wholly contained within the exterior boundaries of the Reservation from Sections 1 through 5 of the report in addition to the web site maps. Again, these waterbodies are outside the scope of IDEQ's Clean Water Act authority.	See policy response to comment in policy section for Commentor #1.
ID17060306CL014_03T	Cottonwood Creek (Nez Perce County)	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This AU appears in Section 2 as ID17060306CL014_03.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060306CL015_02T	Jacks Creek	1	First, the 2002/2003 Draft Integrated Report incorrectly states, "[T]he status of AU's within the Reservation boundary was maintained with respect to the 1998 § 303 (d) list unless there was an EPA approved TMDL".	This AU now appears in Section 2 as ID17060306CL015_02.
ID17060306CL015_02T	Jacks Creek	1	Second, the Tribe requests that reference be removed to waterbodies wholly contained within the exterior boundaries of the Reservation from Sections 1 through 5 of the report in addition to the web site maps. Again, these waterbodies are outside the scope of IDEQ's Clean Water Act authority.	See policy response to comment in policy section for Commentor #1.
ID17060306CL015_02T	Jacks Creek	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This AU is supporting and now appears in Section 2 as ID17060306CL015_02.
ID17060306CL016_02T	Big Canyon Creek, and	1	First, the 2002/2003 Draft Integrated Report incorrectly states, "[T]he status of AU's within the Reservation boundary was maintained with respect to the 1998 § 303 (d) list unless there was an EPA approved TMDL".	This appears in Section 5 as ID17060306CL016_02.
ID17060306CL016_02T	Big Canyon Creek	1	Second, the Tribe requests that reference be removed to waterbodies wholly contained within the exterior boundaries of the Reservation from Sections 1 through 5 of the report in addition to the web site maps. Again, these waterbodies are outside the scope of IDEQ's Clean Water Act authority.	See policy response to comment in policy section for Commentor #1.
ID17060306CL016_02T	Big Canyon Creek	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This appears in Section 5 as ID17060306CL016_02.
ID17060306CL016_03T	Big Canyon Creek, and	1	First, the 2002/2003 Draft Integrated Report incorrectly states, "[T]he status of AU's within the Reservation boundary was maintained with respect to the 1998 § 303 (d) list unless there was an EPA approved TMDL".	This appears in Section 5 as ID17060306CL016_03.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060306CL016_03T	Big Canyon Creek	1	Second, the Tribe requests that reference be removed to waterbodies wholly contained within the exterior boundaries of the Reservation from Sections 1 through 5 of the report in addition to the web site maps. Again, these waterbodies are outside the scope of IDEQ's Clean Water Act authority.	See policy response to comment in policy section for Commentor #1.
ID17060306CL016_03T	Big Canyon Creek	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This appears in Section 5 as ID17060306CL016_03.
ID17060306CL018_04T	Little Canyon Creek	1	First, the 2002/2003 Draft Integrated Report incorrectly states, "[T]he status of AU's within the Reservation boundary was maintained with respect to the 1998 § 303 (d) list unless there was an EPA approved TMDL".	This appears in Section 2 as ID17060306CL018_04.
ID17060306CL018_04T	Little Canyon Creek	1	Second, the Tribe requests that reference be removed to waterbodies wholly contained within the exterior boundaries of the Reservation from Sections 1 through 5 of the report in addition to the web site maps. Again, these waterbodies are outside the scope of IDEQ's Clean Water Act authority.	See policy response to comment in policy section for Commentor #1.
ID17060306CL018_04T	Little Canyon Creek	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This unit was assessed as full support in 1998.
ID17060306CL021_06T	Portions of the Clearwater River	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See policy response to comment in policy section for Commentor #1.
ID17060306CL022_02T	Fivemile Creek	1	First, the 2002/2003 Draft Integrated Report incorrectly states, "[T]he status of AU's within the Reservation boundary was maintained with respect to the 1998 § 303 (d) list unless there was an EPA approved TMDL".	This unit appears in Section 2 as ID17060306CL022_02.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060306CL022_02T	Fivemile Creek	1	Second, the Tribe requests that reference be removed to waterbodies wholly contained within the exterior boundaries of the Reservation from Sections 1 through 5 of the report in addition to the web site maps. Again, these waterbodies are outside the scope of IDEQ's Clean Water Act authority.	See policy response to comment in policy section for Commentor #1.
ID17060306CL022_02T	Tom Taha Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See above.
ID17060306CL022_02T	Tom Taha Creek	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This unit was assessed as full support in 1998.
ID17060306CL022_02T	Fivemile Creek	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	See above.
ID17060306CL022_03T	Fivemile Creek	1	First, the 2002/2003 Draft Integrated Report incorrectly states, "[T]he status of AU's within the Reservation boundary was maintained with respect to the 1998 § 303 (d) list unless there was an EPA approved TMDL".	This AU appears in Section 2 as ID17060306CL022_03.
ID17060306CL022_03T	Fivemile Creek	1	Second, the Tribe requests that reference be removed to waterbodies wholly contained within the exterior boundaries of the Reservation from Sections 1 through 5 of the report in addition to the web site maps. Again, these waterbodies are outside the scope of IDEQ's Clean Water Act authority.	See policy response to comment in policy section for Commentor #1.
ID17060306CL022_03T	Tom Taha Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See above.
ID17060306CL022_03T	Tom Taha Creek	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This AU appears in Section 2 as ID17060306CL022_03.
ID17060306CL022_03T	Fivemile Creek	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This AU appears in Section 2 as ID17060306CL022_03.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060306CL022_06T	Portions of the Clearwater River	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See policy response to comment in policy section for Commentor #1.
ID17060306CL023_02T	Sixmile Creek	1	First, the 2002/2003 Draft Integrated Report incorrectly states, "[T]he status of AU's within the Reservation boundary was maintained with respect to the 1998 § 303 (d) list unless there was an EPA approved TMDL".	This AU appears in Section 5 as ID17060306CL023_02.
ID17060306CL023_02T	Sixmile Creek	1	Second, the Tribe requests that reference be removed to waterbodies wholly contained within the exterior boundaries of the Reservation from Sections 1 through 5 of the report in addition to the web site maps. Again, these waterbodies are outside the scope of IDEQ's Clean Water Act authority.	See policy response to comment in policy section for Commentor #1.
ID17060306CL023_02T	Sixmile Creek	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This AU appears in Section 5 as ID17060306CL023_02.
ID17060306CL023_03T	Sixmile Creek	1	First, the 2002/2003 Draft Integrated Report incorrectly states, "[T]he status of AU's within the Reservation boundary was maintained with respect to the 1998 § 303 (d) list unless there was an EPA approved TMDL".	This AU appears in Section 5 as ID17060306CL023_03.
ID17060306CL023_03T	Sixmile Creek	1	Second, the Tribe requests that reference be removed to waterbodies wholly contained within the exterior boundaries of the Reservation from Sections 1 through 5 of the report in addition to the web site maps. Again, these waterbodies are outside the scope of IDEQ's Clean Water Act authority.	See policy response to comment in policy section for Commentor #1.
ID17060306CL023_03T	Sixmile Creek	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This AU appears in Section 5 as ID17060306CL023_03.
ID17060306CL024_03T	Lawyer Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	This AU appears in Section 5 as ID17060306CL024_03. See policy response to comment in policy section for Commentor #1.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060306CL024_04T	Lawyer Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	This AU appears in Section 2 as ID17060306CL024_04.
ID17060306CL025_02T	Sevenmile Creek	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This AU appears in Section 5 as ID17060306CL025_02.
ID17060306CL025_03T	Sevenmile Creek	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This AU appears in Section 5 as ID17060306CL023_02.
ID17060306CL026_04T	Portions of the Clearwater River	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See policy response to comment in policy section for Commentor #1.
ID17060306CL026_04T	Lolo Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	This AU appears in Section 2 as ID17060306CL026_04.
ID17060306CL039_04T	Orofino Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See policy response to comment in policy section for Commentor #1.
ID17060306CL041_03T	Bedrock Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See policy response to comment in policy section for Commentor #1.
ID17060306CL041_03T	Bedrock Creek	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This AU appears in Section 5 as ID17060306CL041_03.
ID17060306CL043_03T	Pine Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See policy response to comment in policy section for Commentor #1.
ID17060306CL043_03T	Pine Creek	1	The Tribe and EPA are currently working on the TMDL assessments for the listed waterbodies.	This AU appears in Section 5 as ID17060306CL043_03 and is correctly carried over from the 1998 303(d) list.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060306CL044_06T	Potlatch River	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See policy response to comment in policy section for Commentor #1.
ID17060306CL066_02T	Catholic Creek	1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See policy response to comment in policy section for Commentor #1.
		1	First, the Tribe would like to remind IDEQ that EPA and the Tribe are responsible for implementation of the Clean Water Act for Reservation water bodies and the 1994 § 303(d) list is still in affect for these waters. The 2002/2003 Draft Integrated Report incorrectly states, "[T]he status of AU's within the Reservation boundary was maintained with respect to the 1998 § 303 (d) list unless there was an EPA approved TMDL".	Waters on the 1998 303(d) List and in the 2002/2003 Integrated Report may be partially or wholly within Indian reservations, on lands held by tribal members subject to a restriction on alienation, and/or held by the United States in trust for Indian Tribes. The draft Integrated Report was accompanied by a map that showed the Tribal reservation boundaries recognized by the EPA and other federal agencies. AUs were edited to end and/or begin at the federally-recognized reservation boundaries, and some waters were accordingly identified as tribal waters. DEQ has determined, however, that splitting AUs in this manner makes some of the beneficial use calls incorrect or inconsistent with the WBAGII method of assessment. For example, when some of the AUs were split, there was no longer a sampling or assessment site within the boundaries of the AU that would support the beneficial use determination. In order to remedy this situation, DEQ has removed the reservation boundaries from the map, and the AUs are now kept intact even where they may cross Tribal reservation boundaries. DEQ has instead included a new Appendix that identifies those waters that may be within the federally recognized Tribal reservations. DEQ's actions with respect to the integrated report and such waters, including the identification of tribal waters and the description of reservation boundaries,

AUs	Waterbody Name	Commentor	Comments	Responses
				do not constitute a determination, waiver, admission, or statement on the part of the State of Idaho with respect to jurisdiction over such waters or the boundaries of any tribal reservation. The status of the AUs within the federally-recognized reservation boundaries was maintained with respect to the 1998 303(d) unless there was an EPA approved TMDL.
		1	Second, the Tribe requests that reference be removed to water bodies wholly contained within the exterior boundaries of the Reservation from Sections 1 through 5 of the report in addition to the web site maps.	See answer to above.
		1	Third, the Tribe requests that reference be removed to other waters that are partly inside the Reservation boundaries from Sections 1 through 5 of the report in addition to the web site maps.	See answer to above.
		1	The Nez Perce Tribe questions this assertion as there have been many historic mining and grazing impacts in these watersheds. While these systems may often be recovering from historic impacts, they are not pristine in many cases. In addition, there are current mining claims in many of these areas which have potential to degrade wilderness streams with tailings containing heavy metals, sediment, and chemicals (i.e., the Golden Hand Project in the Frank Church – River of No Return Wilderness). These water bodies should be evaluated for historic and current activities including reclamation, which may impair beneficial uses.	DEQ concurs with the concept and carefully screened each AU proposed for Section 1 as outlined in DEQ's Principles and Policies for the Integrated Report. Many AUs in and around the Frank Church River of No Return Wilderness were rejected due to similar concerns. On page 21 of Principles and Policies for the 2002/2003 DRAFT INTEGRATED (303(d)/305(b)) REPORT (Principles and Policies Document hereafter) for the 2002 Integrated Report states: "Natural background condition does not necessarily equal pristine...." Of all the waters in Idaho, these waters stand out, and some waters that have monitored have been selected as part of the reference trend network.
		1	Examples of Section 1 listed water bodies that these are downstream from previous and/or current mining activity include: Monumental Creek, WF of Monumental Creek, and Yellowjacket Creek. Monumental Creek should be evaluated for impacts	There is some cause for concern here due to historic impacts within the Monumental Creek watershed. In the Monumental Creek drainage, there are 2 AUs in question. The first AU is ID17060206SL014_02 and contains second order tributaries to the West Fork of

AUs	Waterbody Name	Commentor	Comments	Responses
			from the Dewey Mine. Yellowjacket Creek should be evaluated for impacts from the extensive Yellowjacket Mine. The WF of Monumental Creek has mining activity identified in the stream corridor. In addition, Monumental Creek is not included in the wilderness boundary for a significant portion and a road parallels the stream in the riparian corridor for approximately 4 miles.	<p>Monumental Creek, excluding Monumental Creek proper, and is not in proximity to any road. This AU will be retained in Section 1. The second AU, ID17060206SL012_04, meets the definitions of Wilderness but is in a location where the Wilderness boundary meanders and does not support the approach DEQ has taken. The 1994 listing of Monumental Creek was not based on data indicating a Water Quality Standards (WQSs) violation or impairment of the beneficial use; rather, it was promulgated by the EPA as a Stream Segment of Concern. Subsequently the bulk of Monumental Creek was delisted in 1998 based on monitoring data. The upper portion remained on the list and, when transferred to AUs, captured many of the 2nd order stream draining directly to Monumentals Creek.</p> <p>The AU will be moved to Section 2.</p> <p>Yellowjacket Creek: This is the 3rd order portion that drains to Camas Creek, a tributary of the Middle Fork of the Salmon River. This AU will be retained in Section 1.</p>
		1	The Nez Perce Tribe would also like to comment on the IDEQ criteria to exclude or remove waters from Section 5 (§ 303 (d) list). The Tribe has concerns regarding the accuracy of sediment assessment in the state's beneficial use methodology used to make listing decisions. Recently, the Tribe identified the inability of WBAG II to discriminate for sediment impairment in the tributaries of the South Fork of the Clearwater River. The Tribe would like IDEQ to review relevant data from land management agencies as required by WBAG II prior to making listing decisions regarding sediment.	DEQ disagrees with the Tribe's assertion that WBAG2 is insensitive to sediment. WBAG2 is neither intended nor has it been promoted to identify pollutants or sources. This step is taken during the Sub BASIN Assessment process. DEQ reviewed and classified all outside data into the appropriate Tiers (1-3) prior to making decisions with WBAG2.

AUs	Waterbody Name	Commentor	Comments	Responses
		2	Idaho Department of Fish and Game staff have reviewed the draft 2002-2003 Integrated 303 (d)/305 (b) Report. While we did find it sometimes difficult to compare this report to the 1998 report, in general we found no obvious inconsistencies in the listings. We do not have, nor are we aware of, additional data to suggest that the waterbody designations and listed pollutants are inappropriately listed. If you have any questions or concerns, please contact me at 287-2715. Thank you for the opportunity to comment.	It is difficult to compare the two documents due to a change in the reporting units. In 1998 stream segments called "water quality limited segments" (WQLSEG) were used and were linear in nature. For the 2002 Integrated Report, DEQ has changes to an AU based approach as a result of EPA guidance to base water quality assessments on a waterbody indexing system based on the National Hydrography Data Set (NHD).
		3	6. Existing and Readily Available Data - How come the Tribes are not mentioned as a data source? The Coeur d' Alene Tribe was petitions for data and we submitted it to personnel in the Coeur d' Alene office.	This comment is unclear. The Principles and Policies document does not name any specific sources of data. All references are categorical: "The data used in the assessment process may be from other agencies, institutions, commercial interests, interest groups, or individuals and may relate to the existence, support status, or associated criteria for the beneficial uses in a waterbody."
		3	7. Data Quality - Once again under the Tier 1 data Tribes are not mentioned.	This seems to be a reference to WBAG2. WBAG2 had its own public comment period and those comments and responses are available here: http://www.deq.state.id.us/water/surface_water/wbag/WBAG2001_Response_Sec2-Sec3.pdf
		3	12. Tribal Waters - The report states "AU's were edited to end and begin at the reservation Boundary." This is not quite correct as many sections of reservation streams are listed in some of your sections. For instance Alder Creek is listed from its headwaters to its mouth.	While all the segments were edited to begin and end at the reservation boundaries, DEQ's display of support status does not constitute a claim or waiving of jurisdictional authority. Segment status was simply moved forward from the 1998 303(d) list. Alder Creek has 2 AUs: ID17010304PN008_02T ID17010304PN008_02
		3	Section 2 - Rivers Supporting some uses: The report lists Benewah Creek as supporting some uses. First we must take this opportunity to remind DEQ that	Waters on the 1998 303(d) List and in the 2002/2003 Integrated Report may be partially or wholly within Indian reservations, on lands held by Tribal members

AUs	Waterbody Name	Commentor	Comments	Responses
			this watershed is entirely within the Coeur d' Alene Reservation and that jurisdiction for assessing water quality and developing cleanup priorities lies solely within the jurisdiction of the Coeur d' Alene Tribe and EPA.	subject to a restriction on alienation, and/or held by the United States in trust for Indian Tribes. The draft Integrated Report was accompanied by a map that showed the Tribal reservation boundaries recognized by the EPA and other federal agencies. AUs were edited to end and/or begin at the federally-recognized reservation boundaries, and some waters were accordingly identified as Tribal waters. DEQ has determined, however, that splitting AUs in this manner makes some of the beneficial use calls incorrect or inconsistent with the WBAGII method of assessment. For example, when some of the AUs were split, there was no longer a sampling or assessment site within the boundaries of the AU that would support the beneficial use determination. In order to remedy this situation, DEQ has removed the reservation boundaries from the map and the AUs are now kept intact even where they may cross Tribal reservation boundaries. DEQ has instead included a new Appendix that identifies those waters that may be within the federally recognized Tribal reservations. DEQ's actions--with respect to the Integrated Report and such waters, including the identification of tribal waters and the description of reservation boundaries--do not constitute a determination, waiver, admission, or statement on the part of the state of Idaho with respect to jurisdiction over such waters or the boundaries of any tribal reservation. The status of the AUs within the federally-recognized reservation boundaries was maintained with respect to the 1998 303(d) unless there was an EPA approved TMDL.
		3	Section 2 - Rivers Supporting some uses: Secondly this stream is currently in the process of receiving a TMDL for sediments, nutrients and dissolved oxygen as it was put on the States 1996 303 (d) list.	See answer to above.

AUs	Waterbody Name	Commentor	Comments	Responses
		3	Section 2 - Rivers Supporting some uses: In this section DEQ does not state that uses are supported. This might be helpful to the general public.	This quantity of information is enormous, and DEQ is best able to display this information through Web-based interactive products at www.deq.state.id.us
		3	Section 3 - Lakes not assessed: Black Lake is listed in this section as not being assessed yet a nutrient TMDL is currently being developed for this Lake as it was listed on the 1996 (303 (d) list.	Black Lake is listed in Section 5 under lakes for Nutrients.
		3	Section 3 - Lakes not assessed: Lamb Creek is listed under the Lakes not assessed shouldn't it be in with the streams not assessed? Lamb Creek lies completely within the Coeur d' Alene Reservation.	Inaccuracies occurred in this section due to the structure of the National Hydrography Dataset (NHD). NHD has “streams” underneath the lakes for flow modeling purposes, and, due to this, some portions of streams will show in the lakes section. All assessment units bordering lakes are being edited to properly display the correct waterbody type for the 2004 Integrated Report.

AUs	Waterbody Name	Commentor	Comments	Responses
		3	<p>Section 3 - Rivers not assessed: Bellgrove, Bozard, Evans, Fighting, Kruse, and Lake Creeks are listed as not being assessed; all but Bellgrove and Kruse have been assessed by the Coeur d' Alene Tribe. These streams are cross-jurisdictional. TMDL's are currently being drafted for Lake and Fighting Creeks</p>	<p>Waters on the 1998 303(d) List and in the 2002/2003 Integrated Report may be partially or wholly within Indian reservations, on lands held by tribal members subject to a restriction on alienation, and/or held by the United States in trust for Indian Tribes. The draft Integrated Report was accompanied by a map that showed the Tribal reservation boundaries recognized by the EPA and other federal agencies. AUs were edited to end and/or begin at the federally-recognized reservation boundaries, and some waters were accordingly identified as tribal waters. DEQ has determined, however, that splitting AUs in this manner makes some of the beneficial use calls incorrect or inconsistent with the WBAGII method of assessment. For example, when some of the AUs were split, there was no longer a sampling or assessment site within the boundaries of the AU that would support the beneficial use determination. In order to remedy this situation, DEQ has removed the reservation boundaries from the map and the AUs are now kept intact even where they may cross Tribal reservation boundaries. DEQ has instead included a new Appendix that identifies those waters that may be within the federally recognized Tribal reservations. DEQ's actions with respect to the Integrated Report and such waters, including the identification of tribal waters and the description of reservation boundaries, do not constitute a determination, waiver, admission, or statement on the part of the state of Idaho with respect to jurisdiction over such waters or the boundaries of any tribal reservation. The status of the AUs within the federally-recognized reservation boundaries was maintained with respect to the 1998 303(d) unless there was an EPA approved TMDL.</p>

AUs	Waterbody Name	Commentor	Comments	Responses
		3	Section 3 - Rivers not assessed: Data was never requested for Bellgrove, Evans, Fighting, and Kruse Creeks.	During a call for data, the State of Idaho is seeking all readily available data pertaining to WQS violations and the beneficial use support status of a waterbody. DEQ does not target specific waters for which to seek data. Above the CDA Tribe states in another comment to DEQ asked, "How come the Tribes are not mentioned as a data source? The Coeur d' Alene Tribe was petitions for data and we submitted it to personnel in the Coeur d' Alene office."
		3	Section 3 - Rivers not assessed: Benewah, Cherry, Peedee, and Plummer, have all been assessed except for Peedee by the Coeur d' Alene Tribe. These four streams all lie within the Coeur d' Alene Reservation	Waters on the 1998 303(d) List and in the 2002/2003 Integrated Report may be partially or wholly within Indian reservations, on lands held by tribal members subject to a restriction on alienation, and/or held by the United States in trust for Indian Tribes. The draft Integrated Report was accompanied by a map that showed the Tribal reservation boundaries recognized by the EPA and other federal agencies. AUs were edited to end and/or begin at the federally-recognized reservation boundaries, and some waters were accordingly identified as tribal waters. DEQ has determined, however, that splitting AUs in this manner makes some of the beneficial use calls incorrect or inconsistent with the WBAGII method of assessment. For example, when some of the AUs were split, there was no longer a sampling or assessment site within the boundaries of the AU that would support the beneficial use determination. In order to remedy this situation, DEQ has removed the reservation boundaries from the map and the AUs are now kept intact even where they may cross Tribal reservation boundaries. DEQ has instead included a new Appendix that identifies those waters that may be within the federally recognized Tribal reservations. DEQ's actions with respect to the integrated report and such waters, including the identification of tribal

AUs	Waterbody Name	Commentor	Comments	Responses
				<p>waters and the description of reservation boundaries, do not constitute a determination, waiver, admission, or statement on the part of the State of Idaho with respect to jurisdiction over such waters or the boundaries of any Tribal reservation. The status of the AUs within the federally-recognized reservation boundaries was maintained with respect to the 1998 303(d) unless there was an EPA approved TMDL.</p> <p>The tribe did not provide Tier 1 data or assessments to DEQ.</p>
		3	Section 3 - Rivers not assessed: The Tribe would also like to know why Benewah is listed under Section 2 for supporting some uses and then is listed here. As stated above Benewah is currently receiving a TMDL.	See answer to above.
		3	Section 3 Rivers not assessed: Rock, Middle Fork Rock, North Fork Rock and Rose creeks are listed as not assessed. North Fork Rock Creek has been assessed by the Coeur d' Alene Tribe but more importantly these watersheds all lie within the Coeur d' Alene Reservation and flow into Washington State.	See answer to above.
		3	Section 5 Impaired Waters: Lakes - Why is Coeur d' Alene Lake not listed for metals? It is listed for sediment, nutrients and habitat alteration. With over a hundred years of mining in the Coeur d' Alene River and the lake being the receiving waterbody, one would believe that it should be listed for metals.	This has been rectified.
		3	Section 5 Impaired Waters: Rivers – The Coeur d' Alene Water Resource Program would also like to point out that Lake, Fighting and Benewah Creeks are also receiving TMDL's and they are not noted in this section as the were listed on the 1996 and 1998 303 (d) list.	EPA has not approved these TMDLs. At such time, these AUs could be moved to Section 4a with the understanding that the TMDLs were developed by EPA.

AUs	Waterbody Name	Commentor	Comments	Responses
		3	<p>Interactive Map – On DEQ’s web page there is an interactive map that lists streams that are in full support, not assessed, not supporting and wilderness. The Water Resource Program would like to point out that there are various stream segments within the Coeur d’ Alene Reservation that are listed under the first three categories. Once again DEQ does not have the authority to make a call on which streams meet and do not meet supporting status within Reservations. An idea might be to make tribal waters a different color and specify that the Tribes are overseeing TMDL development of these waters.</p>	<p>Waters on the 1998 303(d) List and in the 2002/2003 Integrated Report may be partially or wholly within Indian reservations, on lands held by Tribal members subject to a restriction on alienation, and/or held by the United States in trust for Indian Tribes. The draft Integrated Report was accompanied by a map that showed the Tribal reservation boundaries recognized by the EPA and other federal agencies. AUs were edited to end and/or begin at the federally-recognized reservation boundaries, and some waters were accordingly identified as Tribal waters. DEQ has determined, however, that splitting AUs in this manner makes some of the beneficial use calls incorrect or inconsistent with the WBAGII method of assessment. For example, when some of the AUs were split, there was no longer a sampling or assessment site within the boundaries of the AU that would support the beneficial use determination. In order to remedy this situation, DEQ has removed the reservation boundaries from the map and the AUs are now kept intact even where they may cross Tribal reservation boundaries. DEQ has instead included a new Appendix that identifies those waters that may be within the federally recognized Tribal reservations. DEQ’s actions with respect to the integrated report and such waters, including the identification of Tribal waters and the description of reservation boundaries, do not constitute a determination, waiver, admission, or statement on the part of the State of Idaho with respect to jurisdiction over such waters or the boundaries of any tribal reservation. The status of the AUs within the federally-recognized reservation boundaries was maintained with respect to the 1998 303(d) unless there was an EPA approved TMDL.</p>

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW001_06	Boise River: Indian Creek to Mouth	5	This AU should be removed from Section 3 because it has been assessed and two TMDLs have been completed and approved for this reach. This AU should be listed in Section 4a (TMDL Complete: Sediment and Bacteria TMDL; DEQ 2000); and temperature should be listed in Section 4c based on information included in the final lower Boise River TMDL (e.g. no temperature TMDL, diminimus anthropogenic heat; IDEQ, 2000) and subsequent changes to State Water Quality Standards concerning natural background provision for temperature (IDAPA 58.01.02.200.09).	ID17050114SW001_06 will be listed in Section 4a for sediment and bacteria. DEQ considers temperature (thermal modification) a pollutant. As such, it does not belong in section 4c.
ID17050114SW001_06	Boise River: Indian Creek to Mouth	5	This AU should be listed in Section 4a (TMDL Complete) based on the approved LBR Sediment and Bacteria TMDLs (IDEQ 2000).	ID17050114SW001_06 will be moved to Section 4a.
ID17050114SW001_06	Boise River: Diversion Dam to Mouth	5	These AUs should be listed in Section 4c for Flow Alteration and Habitat modification based on the Final Approved Lower Boise River TMDL findings. The lower Boise River from Diversion Dam to the mouth is NOT listed for flow alteration or habitat despite listing of the reach immediately above for flow alteration (What occurs at diversion dam that causes flow modification to cease to be an impairment at Diversion Dam?) .	This AU still appears in Section 5 for Thermal Modification and continues to be listed for nutrients. No action was taken for flow and habitat.
ID17050114SW001_06	Boise River: Star to Notus	5	Same as above	See above.
ID17050114SW001_06	Boise River: Notus to Mouth	5	Same as above	See above.
ID17050114SW001_06 These comments should accompany ID17050114SW012_02, 03	Lower Boise River These comments should accompany	5	Listed based on biological data collected from Cottonwood Creek less than 2 miles below Aldape summit. USGS Flow records from Cottonwood Creek are collected about 3-4 miles below (downstream) from the biological monitoring site. USGS flow records show zero flow in Cottonwood Creek every year for a minimum of 1-2 months. The	DEQ will review the applicable flow and water quality data for Cottonwood Creek as part of the scheduled 2006 problem assessment. This assessment will include Crane Creek and Stuart Gulch. Unknown is a pollutant recognized by federal guidance. DEQ Policy is to list an AU for the

AUs	Waterbody Name	Commentor	Comments	Responses
	Stewart Gulch, Cottonwood and Crane Creeks: source to mouth		<p>definition of an intermittent water in the State Water Quality Standards is zero flow for at least one week for most years for ungaged sites.</p> <p>The listing for Cottonwood, Crane, and Stuart Creeks does not identify a responsible pollutant. Federal Listing guidance to the states and IDEQs listing policies identify minimum requirements for waters on the section 5 list, including identification of a pollutant causing the impairment (p 4 of Principles and Policies for the 2002-2003 Report). The listing identifies the pollutant as unknown and therefore is not valid or consistent with minimum requirements for state or federal listing as a Category or Section 5 water.</p> <p>Additionally, both the Final WBAG II (Grafe et al. 2002) and Policy 9 of IDEQs listing document (IDEQ, 2003) indicate that aquatic community indexes cannot be applied to undesignated, intermittent surface waterbodies.</p> <p>Moreover, there are NO data, biological or otherwise, for Crane or Stuart creeks. Using IDEQs listing procedures and policies, it is apparent that all three intermittent foothills creeks should be listed as Section 3 waters.</p>	pollutant of "Unknown" when our biological and habitat data indicate the aquatic life use is not supported. During the SBA/TMDL Process DEQ can the work with the WAG and BAG to identify the correct pollutant of concern. This is clearly stated in DEQ policy.
ID17050114SW001_06	Boise River: RM50 to Mouth	5	Nutrient listing should be removed to be consistent with Federal and State Listing Guidance and to avoid negative unanticipated impacts	Comment noted.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW005_06	Boise River: RM 50 to Indian Creek	5	This AU should be removed from Section 3 because it has been assessed and two TMDLs have been completed and approved for this reach. This AU should be listed in Section 4a (TMDL Complete; Sediment and Bacteria TMDL; DEQ 2000); and temperature should be listed in Section 4c based on information included in the final lower Boise River TMDL (e.g. no temperature TMDL, diminimus anthropogenic heat; IDEQ, 2000) and subsequent changes to State Wate Quality Standards concerning natural background provision for temperature (IDAPA 58.01.02.200.09).	ID17050114SW005_06 will be removed from Section 3 and listed in Section 4a for sediment and bacteria. DEQ considers temperature (thermal modification) a pollutant. As such, it does not belong in Section 4c.
ID17050114SW005_06	Boise River: RM50 to Indian Creek	5	This AU should be listed in Section 4a (TMDL Complete) based on the approved LBR Sediment and Bacteria TMDLs (IDEQ 2000).	ID17050114SW005_06 will be listed in Section 4a for sediment and bacteria.
ID17050114SW005_06	Boise River: RM50 to Mouth	5	Nutrient listing should be removed to be consistent with Federal and State Listing Guidance and to avoid negative unanticipated impacts	See footnote p. 89.
ID17050114SW005_06	Boise River: Diversion Dam to River Mile 50	5	These AUs should be listed in Section 5 for temperature based on EPA's additional of this segment to the 1998 303(d) list (EPA, 2001b). 1. Delist bacteria from the 2002-2003 303(d) list (Section 5) for the Snake River from River Mile 409 to 347; 2. Delist pH from the 2002-2003 303(d) list (Section 5) for the Snake River from river miles 409 to 347 and 335 to 285; 3. Adjust the priority/schedule for the SR-HC Mercury TMDL to 2006. EPA has already approved the change in Idaho's TMDL schedule for the Mercury TMDL to 2006; 4. Add pesticides as a pollutant (Section 5) for river miles 409 to 335 (the prior listing has pesticides listed only from river Mile 285 to 272.5, or Brownlee Dam to Oxbow Dam); and,	ID17050114SW005_06 will be added to Section 5 for temperature. The remaining comments do not apply to ID17050114SW005_06.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW011b_06	Boise River: Lucky Peak to Diversion Dam	5	This AU should be removed from Section 3 (Not assessed) because it is already listed in Section 4c (flow alteration).	ID17050114SW011a_06 will be removed from Section 3 and added to Section 4c.
ID17050114SW011a_06	Boise River: Diversion Dam to RM 50	5	This AU should be removed from Section 3, listed in Section 4a (TMDL Complete, Sediment TMDL; DEQ 2000) and listed in Section 4c (for temperature) based on information included in the final lower Boise River TMDL (e.g. no temperature TMDL, diminimus anthropogenic heat; IDEQ, 2000) and subsequent changes to State Wate Quality Standards concerning natural background provision for temperature (IDAPA 58.01.02.200.09).	ID17050114SW011a_06 will be listed in Section 4a for sediment. DEQ considers temperature (thermal modification) a pollutant. As such, it does not belong in Section 4c.
ID17050114SW011a_06	Boise River; Diversion Dam to RM 50	5	This AU should be listed in Section 4a (TMDL Complete) based on the approved LBR Sediment TMDL (IDEQ, 2000).	ID17050114SW011a_06 will be listed in Section 4a for sediment.
ID17050114SW011a_06	Boise River: Diversion Dam to RM 50	5	These AUs should be listed in Section 4c for Flow Alteration and Habitat modification based on the Final Approved Lower Boise River TMDL findings. The lower Boise River from Diversion Dam to the mouth is NOT listed for flow alteration or habitat despite listing of the reach immediately above for flow alteration (What occurs at diversion dam that causes flow modification to cease to be an impairment at Diversion Dam?).	This AU still appears in Section 5 for Thermal Modification. No action was taken for flow and habitat.
ID17050114SW011b_06	Boise River: Lucky Peak to Barber	5	Flow alteration, habitat modification (lack of cover, lack of gravels, channelization, embeddedness, and armored substrate)	Comment noted.
ID17050114SW011b_06	Boise River: Barber to Star	5	Same as above	Comment noted.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW011b_06	Lucky Peak to Diversion Dam	5	Incorrectly listed in 5 instead of 4c IDEQ has correctly identified this segment as being listed for flow alteration. Because flow alteration is not a pollutant but pollution, based on Policy 3 of IDEQs listing policies, the appropriate listing Section is 4c instead of Section 5 as contained in the Report.	ID17050114SW011a_06 will be listed in Section 4c.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW012_02	Cottonwood Creek	5	<p>Listed based on biological data collected from Cottonwood Creek less than 2 miles below Aldape summit. USGS Flow records from Cottonwood Creek are collected about 3-4 miles below (downstream) from the biological monitoring site. USGS flow records show zero flow in Cottonwood Creek every year for a minimum of 1-2 months. The definition of an intermittent water in the State Water Quality Standards is zero flow for at least one week for most years for ungaged sites.</p> <p>The listing for Cottonwood, Crane, and Stuart Creeks does not identify a responsible pollutant. Federal Listing guidance to the states and IDEQs listing policies identify minimum requirements for waters on the section 5 list, including identification of a pollutant causing the impairment (p 4 of Principles and Policies for the 2002-2003 Report). The listing identifies the pollutant as unknown and therefore is not valid or consistent with minimum requirements for state or federal listing as a Category or Section 5 water.</p> <p>Additionally, both the Final WBAG II (Grafe et al. 2002) and Policy 9 of IDEQs listing document (IDEQ, 2003) indicate that aquatic community indexes cannot be applied to undesignated, intermittent surface waterbodies. Moreover, there are NO data, biological or otherwise, for Crane or Stuart creeks. Using IDEQs listing procedures and policies, it is apparent that all three intermittent foothills creeks should be listed as Section 3 waters.</p>	<p>DEQ will review the applicable flow and water quality data for Cottonwood Creek as part of the scheduled 2006 problem assessment.</p> <p>Unknown is a pollutant recognized by federal guidance. DEQ Policy is to list an AU for the pollutant of "Unknown" when our biological and habitat data indicate the aquatic life use is not supported. During the SBA/TMDL Process DEQ can the work with the WAG and BAG to identify the correct pollutant of concern. This is clearly stated in DEQ policy.</p>

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW012_02	Crane Creek	5	<p>Listed based on biological data collected from Cottonwood Creek less than 2 miles below Aldape summit. USGS Flow records from Cottonwood Creek are collected about 3-4 miles below (downstream) from the biological monitoring site. USGS flow records show zero flow in Cottonwood Creek every year for a minimum of 1-2 months. The definition of an intermittent water in the State Water Quality Standards is zero flow for at least one week for most years for ungaged sites.</p> <p>The listing for Cottonwood, Crane, and Stuart Creeks does not identify a responsible pollutant. Federal Listing guidance to the states and IDEQs listing policies identify minimum requirements for waters on the section 5 list, including identification of a pollutant causing the impairment (p 4 of Principles and Policies for the 2002-2003 Report). The listing identifies the pollutant as unknown and therefore is not valid or consistent with minimum requirements for state or federal listing as a Category or Section 5 water.</p> <p>Additionally, both the Final WBAG II (Grafe et al. 2002) and Policy 9 of IDEQs listing document (IDEQ, 2003) indicate that aquatic community indexes cannot be applied to undesignated, intermittent surface waterbodies. Moreover, there are NO data, biological or otherwise, for Crane or Stuart creeks. Using IDEQs listing procedures and policies, it is apparent that all three intermittent foothills creeks should be listed as Section 3 waters.</p>	<p>DEQ will review the applicable flow and water quality data for Crane Creek as part of the scheduled 2006 problem assessment.</p> <p>Unknown is a pollutant recognized by federal guidance. DEQ Policy is to list an AU for the pollutant of "Unknown" when our biological and habitat data indicate the aquatic life use is not supported. During the SBA/TMDL Process DEQ can the work with the WAG and BAG to identify the correct pollutant of concern. This is clearly stated in DEQ policy.</p>

AUs	Waterbody Name	Commentor	Comments	Responses
		5	The City recommends that DEQ make changes to the 2004 IDEQ Five Part listing policies based on the recently issued EPA 2004 303(d) listing guidance to states	DEQ is planning to adhere to the 2004 Integrated Report Guidance for the 2004 Integrated Report.
		5	The City recommends that The federal and state guidance for the 2002 303(d) lists identify segment priority and TMDL schedule as required elements. The draft Report does not include listing information for Section 5 (TMDLs required) information related to the individual AU for priority or schedule. Although, the Report does contain a narrative description of the priority and timing in general (i.e., associated with the settlement Agree.ment), we have not been able to find a specific list of priorities by segment or associated schedules in the Report.	There are no such schedules to be found outside of the Settlement Agreement (http://www.deq.state.id.us/water/tmdls/TMDLAgree.ment/SettlementAgree.ment.pdf). All other information pertaining to priority of TMDL development can be found in Section 13 (Prioritization for Subbasin Assessment and Total Maximum Daily Load Development) of the Principles and Policies document.
		5	The City recommends that that the final Report contain a priority ranking and TMDL scheduled data for each AU listed in Section 5.	Of all the parts of the Integrated Report, Section 5 is the most information rich. At this time DEQ will not add a priority ranking in Section 5, though it can be made available at www.deq.state.id.us .
		5	<p>The City notes that reading of the plain language of policy 14 could result in the conclusion that TMDLs are required for all human caused impacts, including those related to habitat and flow alterations that adversely affect the beneficial use and those human caused effects must be diminimus. This interpretation of Policy 14 clearly would be in conflict with Policy 3.</p> <p>IDEQ should review these two policies at a minimum and see if there is a better way to characterize the discussion in Policy 14, so that there is no potential for interpretation of a conflict with Policy 3.</p>	Clarifying language could be added to Section 14. However, it is clearly stated earlier in Section 3: “Flow and habitat alterations are considered pollution but not pollutants according to EPA (WQS §502(6), §502(19) CWA and Robert H. Wayland III, November 19, 2001 memo); hence, DEQ does not develop TMDLs in these two situations.”

AUs	Waterbody Name	Commentor	Comments	Responses
		5	Given the significant strains on the states budgets, including water quality monitoring, it would seem appropriate for IDEQ to stick with the definition contained in the Section 5 minimum requirements section, use the unknown biological data results as indication of where follow-up monitoring is necessary prior to the next listing cycle, and not list waters in Section 5 for which pollutants are unknown. EPA's guidance to states is guidance not rule, so the state has that flexibility to make a call concerning unknown biological data that results in additional monitoring and confirmation of a pollutant prior to including waters in Section/Category 5	The state chooses to list the water in Section 5 when biological monitoring indicates the benefit is no longer supported. The state also chooses to list the pollutant as unknown unless the assessor made the impaired call based on a violation of WQS and, therefore, can name the pollutant as in the case of elevated bacteria or low dissolved oxygen.
		5	The City recommends that: IDEQ include in the 2002-2003 303(d)/305(b) Final List all lakes contained wholly within the wilderness/roadless areas as Section 1 waters; and,	DEQ will consider taking this action in 2004 after proposing the change in policy for public comment.
		5	The City recommends that: IDEQ revise the waterbody assessment units to conform to the wilderness/roadless area boundaries or to modify Policy 14 for the 2004 and future listings to provide for waters with the wilderness/roadless area boundaries to be included as Section 1 waters	This makes sense where other factors support the delineation of the AU at the wilderness roadless area boundary.

AUs	Waterbody Name	Commentor	Comments	Responses
		5	<p>The following adjustments to the 303(d) list are warranted given the information contained in the Final SR-HC TMDL submitted to EPA on July 17, 2003:</p> <ul style="list-style-type: none"> • Delist bacteria from the 2002-2003 303(d) list (Section 5) for the Snake River from River Mile 409 to 347; • Delist pH from the 2002-2003 303(d) list (Section 5) for the Snake River from river miles 409 to 347 and 335 to 285; • Adjust the priority/schedule for the SR-HC Mercury TMDL to 2006. EPA has already approved the change in Idaho's TMDL schedule for the Mercury TMDL to 2006; • Add pesticides as a pollutant (Section 5) for river miles 409 to 335 (the prior listing has pesticides listed only from river Mile 285 to 272.5, or Brownlee Dam to Oxbow Dam); and, Add Total Dissolved Gas as a pollutant to the 2002-2003 303(d) list (Section 5) for the Snake River from River Mile 285 (Brownlee Dam) to River Mile 188 (confluence with the Salmon). 	<p>DEQ has delisted the pollutants Bacteria and pH from river mile 409 to 347 in the AUs.</p> <p>DEQ has committed to do the Hg TMDL in 2006.</p> <p>Pesticides have not been added from river mile 439 to 335. The TMDL call for additional monitoring at this time. The segment was not listed due to the quality and age of the data found.</p> <p>The TMDL is already written but not yet approved. TDG has been added to the AUs that represent that reach and will be moved to Section 4a upon EPA approval of the TMDL.</p>
ID17050114SW010_02	Fivemile Creek 1 st & 2 nd Order, Sec 2	6	<p>The draft report divides Fivemile Creek into two distinct segments: 1st and 2nd Order (17050114SW010_02) and 3rd Order (17050114SW010_03).</p> <p>Recommended changes to the upper Fivemile Creek segment (1st and 2nd Order) are summarized below. Within the table, the following symbol is used:</p> <ul style="list-style-type: none"> • “X” - Means this segment should be delisted for this pollutant 	ID17050114SW010_02 will be listed in Section 2.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW010_02	Fivemile Creek 1 st & 2 nd Order, Sec 5	6	Report Section 2. Nutrients, DO, and sediment should be delisted from Section 5. Although DEQ has stated that “a large portion of [intermittent waters] are unassessed and can be found in Section 3”, this waterbody has undergone more extensive study than those with limited or data (DEQ 2001, NMID and PID 2001). Thus, because this segment should be delisted, it should be placed in Section 2 (Waters Attaining Some Beneficial Uses).	ID17050114SW010_02 will be listed in Section 2.
ID17050114SW010_02	Fivemile Creek 1st & 2nd Order, Sec 5	6	Report Section 5. Nutrients, DO, and sediment should be removed from Section 5 because they are being delisted (DEQ 2001). Bacteria appears to have been erroneously added to Section 5 because it was not contained in the 1998 303(d) list and DEQ does not have any data to indicate impairment from bacteria in the upper intermittent segment (bacteria should be added only to the lower perennial segment [DEQ 2001]). Although DEQ has stated that “a large portion of [intermittent waters] are unassessed and can be found in Section 3”, this waterbody has undergone more extensive study than those with limited or data. Thus, it should be placed in Section 2.	ID17050114SW010_02 will be listed in Section 2. Bacteria will be removed as a pollutant from this assessment unit.
		6	MTI supports delisting the upper segment of Fivemile Creek (Impaired Waters) and moving it to Section 2 (Waters Attaining Some Beneficial Uses) instead of Section 3.	Upper Fivemile Creek (ID17050114SW010_02) is listed for pathogens impairing secondary contact recreation. Fivemile Creek below the New York Canal is listed for bacteria.
ID17040212SK021_0L HUC 7040212	Murtaugh Lake	7	The Twin Falls Canal company has concerns on the listing of this waterbody, particularly since it is NOT a lake in the official “sense” of the word. As a privately owned storage facility, it is utilized for water delivery to water right stockholders of the Twin Falls Canal Company. Murtaugh Lake does not have an underlying stream channel.	This was corrected to reflect a freshwater reservoir instead of a freshwater lake. Murtaugh Lake is now off the impaired list.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17040213SK007L HUC 17040213	Salmon Falls Creek Reservoir	7	We concur with the listing, but would like to know how the listing came about, especially for nutrients and temperature.	This has been corrected to show that the AU has not been assessed and resides in Section 3 of the Integrated Report.
ID17040219SK003L HUC 17040219	Magic Reservoir	7	The Big Wood Canal Company has concerns on the listing of this waterbody, particularly since it is a privately owned storage reservoir.	This was corrected to reflect a freshwater reservoir instead of a freshwater lake. Murtaugh Lake is now off the impaired list.
ID17050102SW004_04	Big Jacks Creek	8	Sed. Why was this creek re-added to the list?	Section 4a.
ID17050102SW008_02	Sugar Valley Creek – Source to mouth	8	Sed.	Section 4a.
ID17050102SW008_03	Sugar Valley Creek – Source to mouth	8	Sed. This creek already has a TMDL on it for Nut, Bac, and Sed. This needs to be changed to reflect the listing by the Bruneau River TMDL.	Section 4a.
ID17050102SW014_04	Sheep Creek	8	Unknown. Why was this creek re-added to the list?	Section 5 (unknown).
ID17050102SW016_02	Marys Creek	8	Unknown. Why was this creek re-added to the list?	Tier I data = NFS. Section 5 (unknown).
ID17050102SW018_02	Pole Creek	8	Unknown. Why was this creek re-added to the list?	Tier I data = NFS. Section 5 (unknown).
ID17050102SW019_02	Cat Creek	8	Unknown. Why was this creek re-added to the list?	Tier I data = NFS. Section 5 (unknown).
ID17050102SW030_02	Big Flat Creek	8	Unknown. Why was this creek re-added to the list?	Tier I data = FS. Section 2.
ID17050102SW033_03	Deer Creek	8	Unknown. Why was this creek re-added to the list?	Tier I data = NFS. Section 5 (unknown).
ID17040220SK013_05	Camas Creek Subbasin – TMDL	8	Our BURP Coordinator states that none of these streams was assessed by the BURP crews for additions. The following segments have been moved out of the order shown in the integrated report for ease of reading:	This segment is a carry over from 1998.
ID17040209SK005_07 HUC 17040209	Snake River – Raft River to Lake Walcott –	8	DO, Pest, Sed.	A TMDL was developed for sediment. The other pollutants were delisted. DEQ is waiting on EPA to make a final determination on the delistings.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17040209SK006_07 HUC 17040209	Snake River – Rock Creek to Raft River –	8	Unknown. These were assessed with Lake Walcott TMDL. These appear to have been added by someone doing the river assessment and not necessarily by the ADB process completed by our BURP Coordinator.	A TMDL was developed for sediment. The other pollutants were delisted. DEQ is waiting on EPA to make a final determination on the delistings.
ID17040209SK011_07 HUC 17040209	Snake River – American Falls Reservoir Dam to Rock Creek –	8	Do, Pest, Sed.	A TMDL was developed for sediment. The other pollutants were delisted. DEQ is waiting on EPA to make a final determination on the delistings.
ID17040212SK000_02 HUC 7040212	Yahoo Creek	8	No designation – Path, Sed. Please add a designation to Yahoo Creek. We suggest Source to Snake River. We concur with the pollutants listed.	This was corrected to reflect a designation from the source to the mouth.
ID17040212SK000_03a HUC 7040212	Yahoo Creek	8	No designation – Path, Sed. Please add a designation to Yahoo Creek. We suggest Source to Snake River. We concur with the pollutants listed.	This was corrected to reflect a designation from the source to the mouth.
ID17040212SK038_02 HUC 7040212	Catchall Creek – Source to mouth –	8	Unknown. One point of concern from our BURP Coordinator: Catchall Creek was not assessed because it is a dry creek. What assessment process was used on a dry creek to place it on the list?	The monitoring sites were assessed and the AU is impaired and appears in Section 5 of the Integrated Report. The East Fork of Clover Creek is part of this same AU and may have caused confusion surrounding this comment.
ID17040219SK004_05 HUC 17040219	Big Wood River – North Fork Big Wood River to Seamans Creek –	8	No pollutants. The Big Wood River TMDL was approved in 2002. A complete assessment of the Big Wood River from headwaters to the Snake River was conducted inclusive of monitoring. Under the SBA and TMDL, it was assessed that the stretch from the Headwaters to Trail Creek was meeting beneficial uses. This stretch includes segment from the North Fork Wood River to Trail Creek.	The designation was corrected so that Seamans Creek is not used as a designation. Seamans Creek no longer discharges to the Big Wood River. The AU ID17040219SK004_05 is the Big Wood River.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17040219SK007_05 HUC 17040219	Big Wood River- Trail Creek to the Glendale Diversion. Seamans Creek	8	The next segment under the SBA/TMDL would normally discharge into this segment. It doesn't. It no longer discharges to the Big Wood River due to flow diversion and flow alteration. Therefore, using Seaman Creek as a segmentation point is not appropriate. We suggest that this new segment on the integrated report be removed since it complicates and falsely assumes segmentation where one doesn't exist.	Seamans Creek no longer discharges to the Big Wood River. This is explained fully in the TMDL.
ID17040220SK004_02 HUC 17040220	Little Beaver Creek – Headwaters to Beaver Creek –	8	Unknown.	This AU appears in Section 2 and is effectively a delisting of 1998 WQLSEG# 5301, 5209, & 5303.
ID17040220SK013_05 HUC 17040220	Camas Creek Subbasin – TMDL	8	Our BURP Coordinator states that none of these streams was assessed by the BURP crews for additions. The following segments have been moved out of the order shown in the integrated report for ease of reading:	This segment is a carry over from 1998 303(d) List. There was an overlap in with Water Quality Limited Segment 5304 which was listed by EPA in 1994.
ID17040220SK018_02 HUC 17040220	Cow Creek – Headwaters to Cow Creek Reservoir –	8	Unknown.	This segment is a carry over from 1998 303(d) List.
ID17040220SK024_02 HUC 17040220	Dairy Creek – Source to Mormon Reservoir	8	Bac, Nut, Iorg, Sed. The TMDL writer says that the data she has collected on Dairy Creek indicates that it meets water quality standards. However, the stream is only viable 3 months of any given year at the most. It's defined as an ephemeral stream. Our BURP Coordinator adds: This stream was not assessed by the BURP crew because it was dry. How did this stream and its pollutants get on the list?	This AU will not be in Section 5. The reason it was in Section 5 of the DRAFT IR was that the 1998 ArcView coverage contained a portion of the creek that under laid Mormon Reservoir, which is listed for bacteria, nutrients, inorganics, and sediment. This was an inaccurate "artifact" of GIS.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17040221SK???_?? HUC 17040221	Little Wood River – West Canal (north) to West Canal (south) –	8	Bac, Nut, Iorg, Sed.	The designation consists of three assessment units: 003_05, 010_05, and 02_05. This unit is 003_??, which is different than the initial three. These are part of the 1998 303(d) listing.
ID17040221SK001_05 HUC 17040221	Richfield town to Big Wood River –	8	The third segment is really a redundancy because it lies from the East-West Canal Diversion to the re-emergence upstream of Silver Creek. The current designation does not account for the Little Wood River from Richfield town to the Big Wood River as previously listed in the 1998 listing.	This segment needs to stay on the 303(d) list as the large river assessment process found it impaired.
ID17040221SK002_05 HUC 17040221	Little Wood River – Carey Lake Outlet to Richfield	8	Nut, Sed.	Two 1998 listings now consist of three assessment units: 003_05, 010_05, and 02_05. Due to the way to previous listings overlay the 2002 Assessment Units the ID17040221SK002_05 has three pollutants: nutrients, sediment, and temperature.
ID17040221SK003_05 HUC 17040221	East Canal Diversion to Silver Creek –	8	Nut, Sed.	Listed in Section 5 for nutrients and sediment.
ID17040221SK007L_0L HUC 17040221	West Fork Fish Creek – Source to Fish Creek Reservoir –	8	Bac, Nut, Iorg, Sed. The TMDL writer asks, “How was this segment and pollutants added to the list?”	West Fork Fish Creek–Source to Fish Creek Reservoir: This is not classified currently in the GIS data. There is primary contact recreation impairment, which was carried forward from the 1998 303(d) list.
ID17040221SK009_02 HUC 17040221	West Fork Fish Creek – Source to Fish Creek Reservoir –	8	Bac, Nut, Iorg, Sed. The TMDL writer asks, “How was this segment and pollutants added to the list?”	Both designations are attached in ArcView to the Fish Creek Reservoir, and consequently the pollutants were carried through in the designations.
ID17040221SK009_03 HUC 17040221	West Fork Fish Creek – Source to Fish Creek Reservoir –	8	Bac, Nut, Iorg, Sed. The TMDL writer asks, “How was this segment and pollutants added to the list?”	Both designations are attached in ArcView to the Fish Creek Reservoir, and, consequently, the pollutants were carried through in the designations.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17040221SK010_05 HUC 17040221	Little Wood River – Little Wood River Reservoir Dam to Carey –	8	Bac, Nut, Iorg, Sed.	This was added by EPA in 2000 from the 1998 List decision.
ID17040221SK014_04 HUC 17040221	Muldoon Creek – Source to mouth –	8	Unknown. The 1998 listing had the designation from South Fork Muldoon Creek to the Little Wood River for Unknown. The TMDL writer states that Muldoon Creek has been confused for Campbell Reservoir Creek and South Fork of Muldoon Creek. This needs to be changed to change the presumed listing. Our BURP Coordinator states that this needs to be pulled off the list because of the mistake in location. Why was the upper part (source to South Fork) added to the list when it is meeting beneficial uses?	This 1998 WQLSEG was #5288 and was added in 1998 by DEQ for an unknown pollutant. This appears to be an incorrect listing as no underlying data can be found to support this action. Because ID17040221SK014_04 overlays the previous listing, this AU will remain in Section 5 until the SBA/TMDL at the recommendation of the Regional Office. This AU was monitored in 2001 and the data will be available to assess for the 2004 Integrated Report.
ID17040221SK023_02 HUC 17040221	Silver Creek – Source to mouth –	8	Unknown. The TMDL writer asks, “Why was this listed?” This spring-fed system doesn’t conform to the current WBAGII protocols for wadable streams. So why was it added to the list?	This AU was carried forward from the 1998 based on data from BURP site ID# 1996STWFA012. This is a BURP site that was placed on Loving Creek, which is a part of ID17040221SK023_02. This was a misapplication of state monitoring and assessment methods, yet EPA refuses to allow the state to delist these waters.
ID17040221SK023_03 HUC 17040221	Silver Creek – Source to mouth –	8	Unknown. The TMDL writer asks, “Why was this listed?” This spring-fed system doesn’t conform to the current WBAGII protocols for wadable streams. So why was it added to the list?	This AU was carried forward from the 1998 based on data from BURP site ID#s 1996STWFB050, 1996STWFB051, and 1996STWFB052. These BURP sites were placed on Silver Creek, which is a part of Assessment Unit ID17040221SK023_03. This was a misapplication of state monitoring and assessment methods, yet EPA refuses to allow the state to delist these waters.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17040202SK007_02	Porcupine Creek – source to mouth Porcupine Cr	9	Sediment “Site assessed with BURP and Upper Henrys SBA (DEQ, 1998) data” “Pre 1997 [sic] BURP data not used in assessment”	

AUs	Waterbody Name	Commentor	Comments	Responses
ID17040202SK007_02	Porcupine Creek – source to mouth	9	<p>a. The reported length of this segment (more than 16 miles) seems large, especially when compared to the segment of the Buffalo River that includes Chick Creek (less than 10 miles). Please review these measurements and explain how the lengths of these segments were determined.</p> <p>b. According to Table 1, BURP data collected by IDEQ on Porcupine Creek in 1997 were used to assess this segment as not supporting cold water aquatic life. Table 22 of the Upper Henry's Fork Subbasin Assessment lists the macroinvertebrate index (MBI) and habitat index (HI) scores that were calculated using the first version of the WBAG and the BURP data available at the time the assessment document was written. The MBI and HI scores indicated that the beneficial use of cold water biota (i.e., aquatic life) was supported at the site sampled on Little Robinson Creek. In fact the MBI score was relatively high (4.9), indicating a large and diverse macroinvertebrate community. This was consistent with the findings of Bressler and Gregory (2000), who found that the mean values for macroinvertebrate taxa richness, EPT (ephemeroptera, plecoptera, trichoptera) richness, and percentage EPT were higher in the Robinson Creek watershed in which Porcupine Creek is located than in any of the other nine watersheds in the Upper and Lower Henrys subbasins. Did IDEQ recalculate the MBI and HI scores using WBAG II and obtain a result that was not consistent with the Upper Henry's Fork Subbasin Assessment or the findings of Bressler and Gregory (2000)? If so, please explain.</p>	<p>The National Hydrography data set includes Rising Creek, four unnamed tributaries and Porcupine Creek in AU 07_02, which total 16.34 miles.</p> <p>Robinson Creek is not included in the Porcupine Creek assessment unit. According to the WBAG II, the average score for this AU was 1.33, which is less than a score of 2, the minimum threshold to be considered "full support."</p> <p>The Stream Fish Index score generated through WBAG II is based on BURP electrofishing information; snorkel data does not qualify as "Tier 1" or BURP compatible data to establish age classes for fish population</p>

AUs	Waterbody Name	Commentor	Comments	Responses
ID17040202SK018_03	Buffalo River – source to Elk Creek Chick Creek	9	Unknown “Based on BURP and Upper Henrys SBA (DEQ , 998) [sic] data” No assessment comments	
ID17040202SK018_03	Buffalo River – source to Elk Creek	9	<p>a. This segment of the Buffalo River is not impaired and should be evaluated by IDEQ as a reference stream.</p> <p>b. According to Table 1, BURP data collected by IDEQ on Chick Creek in 1996 and 1997 were used to assess this segment of Buffalo River as not supporting cold water aquatic life.</p> <p>c. This segment was assessed as not supporting the beneficial use of salmonid spawning. What information was used to make this assessment?</p> <p>d. d.According to Table 1, BURP data collected by IDEQ on Chick Creek in 1996 and 1997 were used to assess this segment of Buffalo River. But the assessment comments for Icehouse and Porcupine Creeks specifically state that BURP data collected prior to 1997 were not used to assess the beneficial uses of these streams. It is</p>	<p>The Buffalo River AU will be split into two AUs: Buffalo River and Chick Creek. The Buffalo River AU (018_03) will be listed as “not assessed”; while the Chick Creek AU (018_03a) will be listed as impaired, as determined by information from the WBAG II and BURP.</p> <p>Data from 1996 was not incorporated into this assessment.</p> <p>The Stream Fish Index (SFI) score generated through WBAG II is based on BURP electrofishing information. The SFI for this AU was scored a 1, which indicates “impaired.”</p> <p>Data from 1996 was not incorporated into this assessment.</p>

AUs	Waterbody Name	Commentor	Comments	Responses
			<p>inconsistent of IDEQ to use data collected in 1996 to assess the beneficial uses of Chick Creek but to exclude data from 1996 from the assessments of Icehouse and Porcupine Creeks.</p> <p>e. The Buffalo River is an important spawning tributary of the Henry's Fork River for rainbow trout. In 1996, Buffalo Hydro, Inc., operators of the hydroelectric project on Buffalo River completed a fish ladder that would enhance upstream passage of spawning fish and retain young-of-the-year fish in the Buffalo River to enhance their overwintering survival and growth.</p> <p>f. Relative to many watersheds in eastern Idaho, the lakes, reservoirs and streams of the Henry's Fork basin have been extensively studied. Information regarding the hydrology of Buffalo River and Chick Creek, including characterization of recharge areas, flow paths, and residence times of their spring sources, has been published by Benjamin (2000). Information regarding the influence of stream habitat and land use on macroinvertebrate assemblages of the Henry's Fork watershed, including Buffalo River and Chick Creek, has been published by Bressler and Gregory (2000). Information regarding assemblages of salmonids throughout the Henry's Fork watershed, including Buffalo River and Chick Creek, has been published by Jaeger et al. (2000). All of these publications are contained in Aquatic Resources of the Henry's Fork Watershed, a special publication of the</p>	

AUs	Waterbody Name	Commentor	Comments	Responses
			Intermountain Journal of Sciences, which was purchased by the Idaho Falls Regional Office of IDEQ in 2002.	
ID17040202SK044_02	Icehouse Creek – source to Island Park Reservoir Icehouse Cr	9	Sediment “Based on BURP and Upper Henrys SBA (DEQ, 1998)” “Older BURP data (pre-1997) not used in assessment”	
ID17040202SK044_02	Icehouse Creek – source to Island Park Reservoir	9	<p>a. The Use Report accessed through the searchable database does not provide a map of this segment.</p> <p>b. Four macroinvertebrate index (MBI) scores, three calculated using IDEQ BURP data and one calculated using data obtained from the Henry’s Fork Foundation, are reported for Icehouse Creek in Table 17 of the Upper Henry’s Fork Subbasin Assessment. But according to IDEQ’s Use Report, the only BURP sample used to assess beneficial uses for the 2002 integrated report was collected in 1997. The samples collected in 1996 on Icehouse Creek one mile above and one mile below the Yale-Kilgore Road produced relatively high MBI scores, indicating full support of cold water biota (i.e., aquatic life use – cold). The sample collected in 1997 approximately five miles below the Yale-Kilgore Road produced an MBI of 1.7, indicating that the stream at this location did not support cold water biota. However, using data collected by Gregory (1997), and MBI of 3.8 was calculated at a location six miles below Yale-Kilgore Road. The discussion of these</p>	The AU must remain as impaired, based on the scores from WBAGII. The sources will be further identified in future Subbasin Assessment documentation. Regardless of the source (land use or flow alteration), the AU remains impaired.

AUs	Waterbody Name	Commentor	Comments	Responses
			<p>results, beginning on page 89 of the Upper Henry's Fork Subbasin Assessment, is as follows:</p> <p>The low MBI and HI scores which were detected by DEQ in 1997 on lower Icehouse Creek, contrasted with the high macroinvertebrate diversity reported by Gregory (1997), indicate that further assessment of this stream is warranted. Both DEQ samplers and Gregory (1997) reported fine silt substrate and heavy livestock grazing on land surrounding the stream. Gregory (1997) did not assess the stream above this lower reach because "irrigation diversions...make it impossible for adfluvial fish from Island Park Reservoir to gain access..."</p> <p>c. In other words, the 1997 BURP site was in a location where the stream was so heavily diverted for irrigation that according to Gregory (1997), stream flow did not reach Island Park Reservoir. Even though qualitative reports indicate that sedimentation may have been occurring because of grazing, impairment could just as likely have been caused by flow alteration, which is not a pollutant for which a TMDL must be prepared. As stated in the assessment document, further assessment is warranted, but listing the stream as impaired for sediment is premature and unsubstantiated. Instead of listing Icehouse Creek, IDEQ should make it a priority to</p>	<p>The Stream Fish Index (SFI) score generated through WBAG II is based on BURP electrofishing information. The SFI for this AU was scored a 1, which indicates "impaired."</p>

AUs	Waterbody Name	Commentor	Comments	Responses
			<p>determine i) where stream flow is diverted, ii) when stream flow is diverted, and iii) whether any stream flow discharges directly to Island Park Reservoir. If it can be determined that Icehouse Creek discharges to Island Park Reservoir, additional BURP samples should be collected in the vicinity of site sampled in 1997.</p> <p>d. This segment was assessed as not supporting the beneficial use of salmonid spawning. What information was used to make this assessment? If fisheries survey data were used, the data should be cited in the Use Report.</p>	
ID17040202SK045_03	Sheridan Creek - Kilgore Road...to mouth Sheridan Cr Sheridan Cr	9	<p>Sediment No segment comments</p> <p>“Segment and all attributes carried forward from 1998 list”</p>	
ID17040202SK045_03	Sheridan Creek - Kilgore Road ... to mouth	9	<p>a. The map of Sheridan Creek shown in the Use Report accessed through the searchable database is not accurate. Sheridan Creek is not a tributary of Willow Creek. Willow Creek is a tributary of Sheridan Creek, and Sheridan Creek is a tributary of Island Park reservoir.</p> <p>b. According to Table 1, this stream segment was carried forward from the 1998 § 303(d) list. This is consistent with the recommendation made in the Upper Henry’s Fork Subbasin Assessment.</p>	

AUs	Waterbody Name	Commentor	Comments	Responses
ID17040202SK046_04	Willow Creek – source to mouth Sheridan Cr	9	Sediment No segment comments “Segment and all attributes carried forward from 1998 list”	
ID17040202SK046_04	Willow Creek – source to mouth	9	<p>a. The map of Willow Creek shown in the Use Report accessed through the searchable database is not accurate. Sheridan Creek is not a tributary of Willow Creek. Willow Creek is a tributary of Sheridan Creek, and Sheridan Creek is a tributary of Island Park reservoir.</p> <p>b. According to Table 1, this stream segment was carried forward from the 1998 § 303(d) list. However, this segment is not shown on the 1998 § 303(d) and should be removed from the 2002 integrated report.</p>	This AU will be removed from the Integrated Report and will be labeled as “not assessed.”
ID17040203SK007_02	Squirrel Creek - Idaho/Wyoming border to mouth Granite Creek Dry Creek Dry Creek	9	<p>Unknown Pathogens “Assessment was performed using BURP data only.”</p> <p>“Dry Creek exceeded 5 sample e-coli threshold.”</p>	See below.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17040203SK007_02	Squirrel Creek - Idaho/Wyoming border to mouth	9	<p>a. The stream segment identification number is not consistent with the identification numbers of water body units listed in IDAPA 58.01.02.150.05. The data used by IDEQ to list this segment pertain to water body unit US-5, Conant Creek - Idaho/Wyoming border to Squirrel Creek, not to water body unit US-7, Squirrel Creek - Idaho/Wyoming border to mouth. According to IDEQ, this segment was listed as impaired based on BURP data collected from Granite Creek (1997SIDFL060) and Dry Creek (1997SIDFL062 and 1997SIDFZ128). However, Granite Creek and Dry Creek are tributaries of Conant Creek upstream of the point at which Squirrel Creek drains into Conant Creek. IDEQ incorrectly identified Conant Creek as a second-order tributary of Squirrel Creek when in fact Squirrel Creek is a second-order tributary of Conant Creek (refer to the Ashton and Rexburg 1:100,000-scale Surface Management Status maps published by the Bureau of Land Management). The impaired segment should be identified as "17040203SK005_02 Conant Creek – Squirrel Creek to mouth," in order to be consistent with IDAPA 58.01.02.150.05.</p> <p>b. When were the five samples collected from Granite Creek for analyses of E. coli?</p> <p>What actions were taken by IDEQ in response to the violation of water quality standards on Granite Creek, as indicated by the 5-sample exceedances of the numeric criteria for E. coli.</p> <p>c. Did IDEQ identify the source of E. coli in the Granite Creek watershed?</p>	<p>The Squirrel Creek AU does not contain Squirrel Creek. This is an artifact of the National Hydrography data set. Squirrel Creek is found in the Falls River AU (SK008_03). Both Dry Creek and Granite Creek are identified as tributaries to Conant Creek. Squirrel Creek enters Conant Creek outside of either of the AUs in question, forming the Conant Creek 04 AU (SK006_04).</p> <p>Bacteria violations for the AU were collected 7/13/99, 8/11/99, 8/16/99, 8/23/99, 8/26/99, 9/1/99.</p> <p>Listing the AU on the 2002 Integrated Report as impaired by pathogens.</p> <p>No. This action will be taken when this AU is slated for Subbasin Assessment and TMDL development at a future date, likely late in 2008.</p>

AUs	Waterbody Name	Commentor	Comments	Responses
ID17040203SK007_03	Squirrel Creek - Idaho/Wyoming border to mouth Conant Creek	9	Unknown “Assessment was performed using BURP data only.” “Results of e-coli below threshold.”	
ID17040203SK007_03	Squirrel Creek - Idaho/Wyoming border to mouth	9	<p>a. The Use Report accessed through the searchable database does not provide a map of this segment.</p> <p>b. According to IDEQ, this segment was listed as impaired based on BURP data collected from four sites on Conant Creek (1997SIDFL061, 1997SIDFL068, 1996SIDFZ127, and 1993SIDFA025). These sites and the BURP sites on Granite and Dry Creeks (see previous comment) should been used to assess water body unit US-6, Conant Creek - Idaho/Wyoming border to Squirrel Creek, and/or US-5, Conant Creek – Squirrel Creek to mouth, not to assess water body unit US-7, Squirrel Creek - Idaho/Wyoming border to mouth.</p>	BURP sites 1997SIDFL061 and 1997SIDFL068 are the sources of monitoring information used to assess this unit. SK007_03 only assess mainstem Conant Creek from its source to the confluence with Squirrel Creek.

AUs	Waterbody Name	Commentor	Comments	Responses
		9	Integration of the § 303(d) list and § 303(b) report improves and streamlines the reporting process under the Clean Water Act, and results in a document that provides much more specific and relevant information. Although the format is a departure from past § 303(d) lists, and therefore has initially confused some other reviewers with whom I have discussed the report, I believe the initial confusion will give way to increased understanding on the part of the public and representatives of local, state, and federal agencies. I believe that users outside of IDEQ will eventually find Sections 2-4 of the integrated report especially useful.	Agree. This is likely a national trend.
		9	The Department made excellent use of the Internet in order to inform the public about the integrated report. The searchable database is especially useful and I'm confident it will become even more so as IDEQ and the University of Idaho refine it.	Agree. DEQ has extensively revamped this tool for the 2004 Integrated Report.
		9	The database is easy to navigate and logical in its design. The links between maps showing basins and subbasins are excellent.	Agree.
		9	The summary tables generated from a subbasin search are well-organized and provide essential information in a concise format. The links to <i>Use Reports</i> for individual water bodies is an excellent feature. Please reduce the sizes of the tables and reformat the Internet page so the maximum amount of information can be printed on a single piece of paper.	There is an option at the bottom of each report for a printable version. Each report is two pages in length.

AUs	Waterbody Name	Commentor	Comments	Responses
		9	Make the <i>Use Reports</i> more concise and compact (i.e., reduce line spacing and the amount of white space), and eliminate the links at the bottom of the report. The current format discourages printing because so much paper is required. The maps are essential components of the report and are very useful.	The new tool adds more information to each report. Provisions for printing will need to be carefully worked through.
		9	Include more detailed BURP and assessment information such as indices calculated from macroinvertebrate, fish, habitat, and river data; analytical results of <i>E.coli</i> tests; analytical results for pollutants that exceed numeric criteria; complete references for documents cited; and locations of BURP sites on the maps. I realize it will be time-consuming to add this information to the database, but the investment of resources will be extremely beneficial in terms of providing information to the public.	These suggestions have been implemented with the exception of bacteria. Other individual pollutants will be displayed so long as the assessor enters the information.
		9	Provide maps that show the entire subbasin and all assessment units. It would great if the maps could link assessment units to <i>Use Reports</i> .	At a scale where an entire subbasin can viewed, all the AUs blur into meaningless background color. Even the waterbody ID maps that are printed on large format printers would be insufficient to fill this request.

AUs	Waterbody Name	Commentor	Comments	Responses
		9	The integrated report is given a variety of different titles. On IDEQ's Internet site it is the <i>Idaho's 2002-03 Integrated 303(d)/305(b) Report</i> and <i>2002/2003 Draft Integrated 303(d)/305(b) Report</i> ; in the title of the document describing principles and policies, it's the <i>2002/2003 Draft Integrated (303(d)/305(b)) Report</i> ; and in the first sentence of the principles and policies document, it's simply the <i>2002 Integrated Report</i> . Although these differences may seem minor to the authors of the web site and the documents, these discrepancies are confusing to the public and entirely unnecessary. Is the report actually the 2002 <u>and</u> 2003 report, or is it simply the 2002 report?	This is the 2002 Integrated Report.
		9	The integrated report, as viewed in PDF format on IDEQ's web page is actually a continuation of the document entitled, <i>Principles and Policies for the 2002/2003 Draft Integrated 303(d)/305(b) Report</i> . The document should be reorganized so that the description of principles and policies, and Sections 1 through 5 of the report, are organized as subsections of a single document. The report could be titled, <i>The Idaho 2002 Integrated 303(d) and 305(b) Report</i> , and the section describing principles and policies could then be titled, <i>Principles and Policies for Compiling the 2002 Integrated 303(d) and 305(b) Report</i> . It is appropriate that principles and policies used to compile the report preface the report.	Both options are available on the Web site. They appear in two ways (One complete document and each portion) in order to optimize the individual files for download based on the public's preference for downloading the document.

AUs	Waterbody Name	Commentor	Comments	Responses
		9	<p>I was unable to find a definition of the term “assessment unit,” or an explanation of how assessment units correspond to waterbody units listed in IDAPA 58.01.02 or the waterbody identification system described in the WBAG II document. When I asked for an explanation from IDEQ personnel, I received quick and helpful responses, though I did not receive any indication that IDEQ personnel recognized or acknowledged that the lack of definitions was a problem. This is an example of why it is important that this document be reviewed and edited by a technical editor, and not the original author. For preparers of the integrated report, “assessment unit” and “waterbody identification system” are virtually synonymous, but the public has no way of knowing this. Terminology must be defined and it must be consistent among all documents produced by IDEQ in order for IDEQ to clearly and unambiguously communicate with the public.</p>	<p>Page 10 of the Principles and Policies Document states that “Assessment Units (AUs) are groups of similar streams that have similar land use practices, ownership, or land management. AUs now define all the waters of the State of Idaho. These units and the methodology used to describe them can be found in the WBAG II.”</p> <p>An example AU is ID17050123SW002_02a. The AU code breaks down to as follows: ID-17050123-SW-002_02. “ID” stands for Idaho; “17050123” is the HUC (NF Payette); “SW” stands for Southwest Basin; “002” is the three-digit number that corresponds to IDAPA 58.01.02; “_02” means second order; and “a” means the second order has been split into more than one unit. Occasionally, other designators are used: “L” is for “Lake” and “T” is for “Tribe.” Successive letters beyond “a” indicate more subdivisions of the second order.</p>
		9	<p>Maps showing assessment units and the waterbody identification system should be incorporated into the integrated report, or at the very least, be made available to the public via IDEQ’s Internet web site. In the interim, the web site should inform the public that these maps are available at regional offices, and the regional offices should provide copies of the maps to the public free of charge.</p>	<p>This is and was available to the public during the Comment period. An inspection of the legend described the colors represented different AUs.</p>

AUs	Waterbody Name	Commentor	Comments	Responses
		9	IDEQ doesn't seriously consider the comments	Disagree. Note the 173 pages of responses. Based on input from the public through the comment process the following changes occurred between draft and final list: 1) 5,600 additional miles of impaired streams were identified. 2) 1,900 additional miles were found to meet WQS and support Beneficial uses 3) The number of miles of EPA approved TMDLs was correct to 12,000, down from 13,000. 4) 72 Assessment Units were added for temperature impairment. 5) An additional 3,300 miles of stream were found to be impaired by flow and/or habitat alteration.
		9	IDEQ has listed numerous intermittent and spring-fed streams, contradicting its own principles and policies, then expects the public and other agencies to identify such errors	Due to the nature of the NHD, some of these types of waterbodies are incorporated into the second order assessment units. Other listing of intermittent waters and spring-fed streams are due to the 1994 court ordered listings. At that time, EPA did not give apparent consideration to waterbody type. DEQ specifically does not place monitoring sites on intermittent streams, spring-fed streams, wetlands, or canals. When a TMDL is done, these other types of waterbody are considered in load allocations.
		9	IDEQ uses one set of standards to list a waterbody as impaired and another, much more rigorous set of standards to delist water bodies. These perceptions were reported by professionals working at State and Federal agencies, and are the primary reason the Water Quality Subcommittee did not meet to prepare comments for submission to IDEQ.	This is due to the nature of the 303(d) list. No water column data has to be compared to a WQS, and the data does not have to show that beneficial use is impaired in order to list a waterbody according to EPA guidance. Although not desirable, some waters have been listed on very little information. This very fact resulted in EPA listing wilderness waters, wild and scenic rivers, and reference streams in the 1994 action. DEQ has worked extremely hard to monitor the waters on the list and to retain those that are truly impaired while working to de list those that are not.

AUs	Waterbody Name	Commentor	Comments	Responses
		10	“...we respectfully submit that the Report represents flawed outcomes in that it uses a flawed document (Waterbody Assessment Guidance). We point to the comments received from the forest products sector during the comment period on WBAG prior to its finalization. We understand that DEQ is not accepting comments on WBAG again at this time.”	Responses to your previous comments can be found in the Response to WBAG2 comments document (http://www.deq.state.id.us/water/surface_water/wbag/WBAG2001_Response_Sec2-Sec3.pdf). Those responses are hereby incorporated in answer to your request.
		10	Nor is DEQ accepting comment at this time on the use of the EPA Integrated Report format at this time or sections1 through 4 of the Report. It appears that DEQ is accepting comments only on whether we Agree. or disAgree. with the listed streams or segments in Section 5.	DEQ considered all comments made. DEQ was seeking comments on assessment results and on the Principles and Policies Document.
		10	Unfortunately, for forestland owners in Idaho, the DEQ maps are not sufficiently precise to match the landowner maps as to segments and location. This presents a huge difficulty in commenting on the Report.	DEQ recognizes this as a shortcoming and has produced a new tool to facilitate public comment that displays10-meter resolution satellite imagery. This should help with future comments.
		10	We reiterate our great concern that all streams, stream segments and water bodies must be realistically assessed prior to inclusion on the Impaired Waters list. Once on that list, an expensive and time consuming process is required to produce a Total Maximum Daily Load (TMDL) and implement it.	Agree.

AUs	Waterbody Name	Commentor	Comments	Responses
		11	Flow alteration (Qalt) and habitat alteration (Halt) are not pollutants. Nevertheless, Section 4(c) of the Report identifies water bodies "Impaired by Flow or Habitat Alteration". EPA and DEQ have no jurisdiction over water quantity, flows or habitat. In fact, DEQ is specifically prohibited from altering water rights for water quality purposes. Idaho Code Sec. 39-104. As a result, all references to Qalt and Halt should be removed from the Report, along with any waterbody listings that are based upon these references. We are encouraged that none of the listings in Section 5 ("Impaired Waters") appear to include Qalt or Halt, but this is not true for Section 4(c). In any event, TMDLs cannot, and should not, be required for flow or habitat alteration.	Section 4c was specifically created so that AUs impaired for flow and habitat alteration would no longer reside on the 303(d) list and, therefore, would not require a TMDL. DEQ has not added flow alteration of habitat alteration as pollutants on any AU in Idaho. All segments in this section are carried over from the 1994 303(d) list. Section 4c will remain in the Integrated Report as per EPA guidance.
		11	Irrigation facilities are not navigable waters and it would be absurd, and a tremendous waste of DEQ resources, in the face of the <i>SWANCC</i> decision, to conclude that they are waters that should be assessed for purposes of the Report. In addition, the cost to develop and meet TMDLs or, alternatively, to develop acceptable Use Attainability Analyses (UAAs), for the thousands of irrigation facilities in Idaho, would be enormous. Accordingly, water bodies identified in the Report that are irrigation conveyance facilities should be removed from all sections of the Report.	In the Integrated Report, no waterbodies are being assessed that are not identified in the WQS, and some of the man-made water bodies are identified as designated uses in our WQS. Further, <i>SWANCC</i> does not stand for the proposition that all irrigation conveyances are not waters of the United States for purposes of the Clean Water Act (CWA). It should also be noted that the WQS treats strictly man-made conveyances differently than natural channels that have been straightened and turned into a vehicle for irrigation.

AUs	Waterbody Name	Commentor	Comments	Responses
		11	<u>Beneficial Use Designations and Water Quality Standards</u> . We encourage DEQ, whenever possible, to reassess the beneficial uses that have been designated for water bodies in Idaho. This is critical to the formulation of any accurate 303(d) list. When beneficial use designations, and corresponding water quality standards, are incorrect, valuable time and resources are wasted on 303(d) designations, TMDL development and implementation, and UAAs.	DEQ agrees with this comment. Prior to any assessment being made, the existing and designated beneficial uses are reviewed. While no designated use can be ignored for assessment purposes, neither can existing uses, which must also be assessed. If existing uses are found to be not supporting, then a TMDL must be developed. The critical step to be completed, according to the CWA, is that all existing uses must be designated.
		12	We do not understand the reason for applying the same water quality data to all the sub reaches of a reach, when no data exists on those sub reaches. It seems that this strategy might unnecessarily create 303 (d) listings on sub reaches that, if data were available, would otherwise be listed.	AUs (a reach) are adjacent groups of similar streams that have similar land use practices, ownership, or land management. Additional factors can be similar hydrography, size, or aspect. Pragmatically, AUs are reporting and monitoring units that allow the State of Idaho to collect data representative of a larger area. In terms of TMDLs, the load allocations have to take into account all the contributing waters to correctly determine what reductions are needed to restore the beneficial use in the receiving water.
		12	It is our understanding that the purpose of releasing this document for public comment is, in part, a desire to find and use additional information if it exists. Our agency does not have additional technical information	DEQ will begin a call for data in late 2003 or early 2004 in preparation for the 2004 Integrated Report.
		13	The draft Integrated Report does not accurately report the findings of total maximum daily loads (TMDLS).	This is true. The problem that occurred was that any AU that had a completed TMDL showed up in Section 4a as having all pollutants with approved TMDLs. This systematic error has been rectified so that the correct AU-Pollutant combinations are displayed.

AUs	Waterbody Name	Commentor	Comments	Responses
		13	IDEQ & Oregon DEQ proposed a temperature TMDL be performed for the Payette, Boise, and Weiser River tributaries. These waters are not listed for thermal modification (temperature) in the draft Integrated report.	<p>DEQ is not proposing temperature listings for all the tributaries, though a load allocation may be written for these water bodies to meet the downstream TMDL. DEQ does not support allowing any increase in temperatures in the Snake River.</p> <p>DEQ did not do a temperature TMDL on the Payette River because water from Black Canyon Reservoir exceeds that standard. EPA did not act on DEQ's course of action.</p> <p>DEQ did not do a TMDL on the Lower Boise River based on analysis that showed the temperatures (28 degrees C) were not due to anthropogenic impacts. EPA did not act on DEQ's course of action. Rather EPA listed Barber to Star for violations of the spawning criteria in 2000.</p> <p>DEQ did a TMDL on the Weiser River for Galloway to the Snake River. We proposed listing of the river from Little Weiser to Galloway.</p>
		13	The Snake River assessment unit below C.J. Strike Reservoir is now listed as affected by thermal modifications, which it previously was not, while it was not a recommendation of the Mid Snake River/Succor Creek Subbasin Assessment and Total Maximum Daily Load	Swan Falls to Boise river is now two AUs: ID17050103SW001_07 (approximately the last seven miles to the Oregon border); and ID17050103SW006_07 (the 80 mile long unit below CJ Strike) to comply with the WBID system in the WQS (WBIDs are the direct link to designated beneficial uses).

AUs	Waterbody Name	Commentor	Comments	Responses
		13	The draft Integrated Report should not list or delist pollutants without supporting technical information or Basin Advisory Groups and Watershed Advisory Group concurrence.	<p>Pollutants can be added based on WQS violations or newer data. Pollutants can only be removed through TMDLs or “good cause.” Good cause includes, but is not limited to, more recent and accurate data, more sophisticated water quality modeling, flaws in the original analysis that led to the waterbody being listed, or changes in conditions (e.g., new control equipment or elimination of discharges), hereafter known as “good cause.”</p> <p>Changes in the list are subject to public participation and public comment process. During which time, presentations of this information were made to all six Basin Advisory Groups.</p>
		13	The 1998 § 303 (d) list identifies the Snake River from river miles 614.7 (Shoshone Falls) to 591.4 (Deep Creek) as impaired by temperature. The draft Integrated Report appears not to list these similar waters as affected by thermal modifications	This omission has been corrected.
		13	Idaho Power Company (IPC) concurs with IDEQ’s decision not to list the Snake River below Hells Canyon Dam for thermal modification in the draft Integrated Report. The EPA added the Snake River below Hells Canyon Dam to the 1998 § 303 (d) list. IPC has requested the data EPA used to add the Snake River below Hells Canyon Dam to the 1998 § 303(d) list. These data were analyzed with Idaho’s assessment methodology. Data indicate the frequency of exceedance of the temperature criteria is less than ten percent during the salmonid spawning period. Further, IDEQ has no evidence of thermal impairment of fall chinook as stated in their comments to the <i>Draft New License Application: Hells Canyon Hydroelectric Complex</i> .	Temperature has been added to the AU. The State of Oregon does not recognize the 10% exceedance policy set forth by the EPA.

AUs	Waterbody Name	Commentor	Comments	Responses
		14	<p>The Snake River downstream of C.J. Strike should be identified as “impaired” for additional pollutants above and beyond those identified by DEQ. Excerpts of referenced documents are attached hereto. In 1993, discharges fell below the 7-day mean minimum level of 4.7 mg/l for four days, while the 30-day mean of 6 mg/l was not met for 24 days. In 1994, the 7-day mean minimum level of 4.7 mg/l was not met for four days; however the 30-day mean of 6 mg/l was always maintained.</p>	<p>The Idaho Power data you reference in the FERC license application is greater than 5-years old and is therefore Tier 2 data. Tier 2 data is appropriate for listing and de-listing decisions only in the context of an SBA or TMDL. Further the reference to the violation is not clear enough to list on its own merit. The reference indicates the number of violations per year. These could be acted upon if a reference to timeframe was given. For example, between July 10 and July 20, 1993, discharges fell below the 7-day mean minimum level of 4.7 mg/l for four days rather than “In 1993....” A nutrient TMDL for CJ Strike is being developed and should contribute to higher DO levels in the discharge.</p>
		14	<p>The NMFS supports the State of Idaho and EPA’s water quality standard of 110 percent. We note that TDG levels downstream of C.J. Strike at North Bridge are consistently higher than 110 percent when spill flows exceeded approximately 3,500 cfs. Similarly, the water quality standard is exceeded at the monitoring location at Grand View when spill flows are somewhere between 6,500 cfs and 10,900 cfs. We request that the Snake River downstream of C.J. Strike be listed as “impaired” for dissolved oxygen and total dissolved gas, and that DEQ prepare TMDLs for those pollutants.</p>	<p>Concur. DEQ is listing TDG as a pollutant.</p>

AUs	Waterbody Name	Commentor	Comments	Responses
		15	<p>The report continues to list mainstem Boise River as impaired for nutrients. However, the DEQ's analysis of the Boise River shows that the mainstem of Boise River is, in fact, not itself impaired for nutrients. The only reason that nutrient-load reductions are being sought at the mouth of the Boise is because of the impairment in Hells Canyon/Brownlee Reservoir. The very least, the Boise River should be delisted for nutrients, as the list gives rise to the false impression that the Boise River is impaired for nutrients.</p>	<p>AU ID17050114SW001_06 remains listed for Nutrients. This unit is the lower 24 miles terminating at the Snake River. The upper two AUs are only listed from sediment.</p>
		15	<p>The 303d list has a significant number of water segments listed for unknown pollutants, including, for example, Mores Creek a tributary to the Boise River. The DEQ's methodology does not explain how a segment is listed for an unknown pollutant when there are a number of other segments that are on a separate list for waters that have not yet been adequately monitored. The rivers listed solely as impaired for unknown pollutants, such as Mores Creek, ought to be moved to the listing in Section 3, if the reason the stream segment is listed as impaired is because there is inadequate assessment done to determine the cause of the impairment. If the stream segment is listed as impaired for a unknown pollutant is truly because of flow or habitat alteration, then the stream should be delisted. The DEQ should state whether "unknown" pollutants have been analyzed to determine if other non-water quality factors are the cause of the alleged impairment.</p>	<p>When DEQ lists an AU with the pollutant as "Unknown", this indicates that adequate monitoring has been completed and the WBAG2 process has found that at least one beneficial use is not supported. In most cases, it is the aquatic life beneficial use. The AUs in Section 3 are defined as not monitored or no data available as opposed to inadequately monitored as the comment indicates.</p> <p>WBAG2 is not identified to ascertain the pollutant or the source. These steps are taken in concert with the development of a TMDL in conjunction with a WAG.</p> <p>DEQ is unable to list impaired waters in Section 3. Impaired waters belong in Section 4 or 5.</p> <p>The EPA also listed Mores Creek for temperature in 2000.</p>

AUs	Waterbody Name	Commentor	Comments	Responses
		15	Section 5 of the list of impaired waters lists the Boise River from Lucky Peak to Diversion Dam as an impaired waterbody segment, even though the listing does not reference any pollutant. That segment of the Boise River, and any other section where any other river segment which does not have specific pollutant as the cause of the alleged impairment, should not be listed.	This was a duplicate record. No pollutant was displayed because it is impaired for Flow Alteration and appears as ID17050114SW011b_06, which is the 2.31 mile section of the Boise River from Lucky Peak to Diversion Dam is listed in Section 4c for Flow Alteration.
		15	It is imperative that the Department establish a process for setting appropriate beneficial uses for intermittent streams and for monitoring whether or not those beneficial uses should be established. The Department should consider creating a separate beneficial use for intermittent streams.	We agree that guidance is needed in these areas. Due to limited resources, DEQ has prioritized the development of different guidance documents. Since most of Idaho surface water would be classified as perennial streams, DEQ sought to develop sound assessment methods for these water bodies first. As resources and administration priorities allow, DEQ will develop additional guidance to address other waterbody types.
		15	The Department indicates that over 200 river segments were added for temperature impairment, even though many of these are entirely the result of natural background. If that is the case, and natural events cause water temperature criteria to exceed water quality standards, then the Department should reevaluate the designated beneficial use, i.e., cold water or warm water biota established for those segments, and the Department should reevaluate the appropriate temperature numeric criteria.	<p>We agree that water temperatures exceeding established temperature criteria in areas that are without human sources of heat or can be said to be natural provide <i>prima facie</i> evidence that criteria are not the most appropriate and that either the criteria or use may need to be changed to something more appropriate. That said, it must be recognized that water temperatures vary on a continuum, while standards provide set categories. At present only three set categories exist: cold, seasonal cold, or warm. Therefore, the established criterion will rarely, if ever, be exact or perfect.</p> <p>It must also be recognized that the water quality standards allow for natural exceedance of set criteria, and, as such, is not a violation of the water quality standard. While the rules allow such a possibility, it takes some effort to demonstrate or document natural</p>

AUs	Waterbody Name	Commentor	Comments	Responses
				<p>exceedance to be the case. Typically, DEQ does not have the time or resources to make such a determination in advance of 303(d) listing, so the default is to list. We welcome any help you can offer in showing exceedance of criteria for a particular waterbody is natural.</p> <p>DEQ did participate in a regional effort to reevaluate appropriate numeric temperature criteria. This effort culminated in April 2003 with the publication of "EPA Region 10 Guidance For Pacific Northwest State and Tribal Temperature Water Quality Standards." Unfortunately, although Idaho argued strenuously for higher numeric criteria, the guidance, in deference to endangered salmon and steelhead, has recommended even colder criteria than Idaho presently has in its rules. Given this, it seems that our best bet for better aligning temperature criteria with environmental reality lies in better use designations. In order to change a use, the burden is on us to show that the existing use is unattainable and that an alternate use is more appropriate. To ultimately succeed in making the change, we must convince EPA, and then NOAA Fisheries and Fish and Wildlife Service, that the change is protective and appropriate. We welcome any information and help on specific waterbodies you can provide that may build the case for more appropriate use designations.</p>

AUs	Waterbody Name	Commentor	Comments	Responses
		15	The report is unclear about what effect the development of Use Attainability Analyses (UAAs) have had on the listing of tributaries. In particular, in the Boise River, some tributaries were subject to Use Attainability Analyses. Yet, those tributaries appear to be still contained on the list of water quality-limited segments. The Department should clarify that stream segments meeting the goals of any revisions to the water quality standards as they apply to those particular segments through UAAs should be delisted as well.	The UAA you refer to has not been approved by EPA; therefore, DEQ cannot take action, and the AUs in question must remain in Section 5, just as AUs with complete, yet unapproved, TMDLs must remain in Section 5.
		15	The 303d List is unclear for the basis of listing one-half mile of Arrowrock Reservoir as impaired by sediment. Arrowrock Reservoir is, to the knowledge of the Boise Project which uses storage behind Arrowrock Reservoir, not impaired by sediment, and the reservoir itself acts as a sediment trap substantially reducing the amount of sediment delivered to the Boise River from below. It also seems inconsistent to list portions of Anderson Ranch and Arrowrock Reservoir as impaired, while listing other portions of the Reservoir as unassessed. Some explanation needs to be provided for the reason that a single reservoir can appear on both lists as impaired and as unassessed.	This is an error and has been rectified. Sediment was transferred from the one of the adjacent underlying stream AUs. It occurred due to the structure of the National Hydrography Dataset (NHD). NHD has “streams” underneath the lakes for flow modeling purposes and due to this some portions of streams will show in the lakes section. All AUs bordering lakes are being edited to properly display the correct waterbody type for the 2004 Integrated Report (IR). Sediment was the transferred from the one of the adjacent underlying stream AUs.
		15	The Boise Project also questions listing the drains, such as Five Mile Creek, Indian Creek, for particular designated beneficial uses over and above the agricultural designation, and also questions whether and how these drains can be impaired for nutrients when the River itself is not listed or should not be listed for nutrients because it meets the nutrient standard of the Idaho Water Quality Act.	These are legacy listings from the 1994 303(d) list. Unless good cause for delisting these waters can be demonstrated or until the designated uses are changed via a UAA or a TMDL is completed, these waterbodies must remain in Section 5 of the Integrated Report.

AUs	Waterbody Name	Commentor	Comments	Responses
HUC# 17040207	East Mill Creek, tributary to Spring Creek in the Diamond Creek watershed	16	<p>One hundred percent of the samples collected from the listed creeks exceeded the criterion continuous concentration (CCC) of 5 µg/L selenium. All of the streams shown in Tables 1 and 2, with the exception of Montpelier and Bakers Creek, should be included in Section 5 with selenium listed as the pollutant. (See: Streams Listed from Tables 1 & 2 below.)</p> <p>Marti Bridges comments: “Regarding Marv Hoyt’s comments about selenium I believe he is correct. We would be obligated to list regardless of if it is NPS or PS and prepare a TMDL unless we have a RCRA, CERCLA or consent decree for cleanup that accomplishes the same thing.” Pocatello Regional Office concurs with Marti’s comments and adds that this stream should be listed from headwaters to confluence with Spring Cr, listed for acute violations of selenium criteria.</p>	<p>East Mill Creek does not exist by this name at 1:100,000 or at 1:24,000 by USGS place names. USGS Upper Valley Quad names this creek Mill Canyon; local nomenclature is E. Mill Canyon Creek, a tributary in the Diamond Creek watershed. This is needed to differentiate from another Mill Canyon in the HUC</p> <p>General comment relating to DEQ evaluation of metals data in the Blackfoot, Salt, and Bear River drainages: For 303(d) listing purposes, DEQ evaluates water quality data in relation to the Criteria Continuous Concentration (CCC) and the Criteria Maximum Concentration (CMC). Under both criteria, a violation of water quality standards occurs if the criteria are exceeded two or more times in a three-year period. For the CCC, DEQ has determined that a minimum of three samples spaced over a 4-day period is required to meet a 4-day average value to be used to evaluate CCC exceedances. For the CMC, instantaneous grab samples are assumed to be reasonably representative of 1-hour average concentrations to be used to evaluate CMC exceedances.</p>
	East Mill Creek (see comments above)	16	<p>(Table 1.) Number of results = to the continuous or maximum criterion for selenium: Number of samples analyzed for selenium (Range of concentrations detected; all values rounded to next higher whole number)</p>	<p>East Mill Creek does not exist by this name at 1:100,000 or at 1:24,000 by USGS place names.</p>

AUs	Waterbody Name	Commentor	Comments	Responses
HUC# 17040207	No name Creek below mining (near Rasmussen Creek)	16	(Table 2) Number of results = to the continuous or maximum criterion for selenium: Number of samples analyzed for selenium (Range of concentrations detected; all values rounded to next higher whole number) Data are not sufficient to determine water quality violations. No listing warranted at this time.	Rasmussen Creek does not exist by this name at 1:100,000 or at 1:24,000 by USGS place names. No Name Creek is associated with Agrium's Rasmussen Ridge Mine and is generally considered a tributary to Angus Creek.
HUC# 17040207	State Land Creek	16	(Table 2) Number of results = to the continuous or maximum criterion for selenium: Number of samples analyzed for selenium (Range of concentrations detected; all values rounded to next higher whole number) Data are not sufficient to determine water quality violations. No listing warranted at this time.	State Land Creek is tributary to upper Blackfoot River and is east of Woodall Mountain and J.R. Simplot's Conda Phosphate Mine.
HUC# 17040207US-24	Wooley Valley Creek	16	(Table 2) Number of results = to the continuous or maximum criterion for selenium: Number of samples analyzed for selenium (Range of concentrations detected; all values rounded to next higher whole number)) Data are not sufficient to determine water quality violations. No listing warranted at this time.	Wooley Valley Creek does not exist by this name at 1:100,000 or at 1:24,000 by USGS place names. Wooley Valley Creek by name does not exist, but the stream in Wooley Valley does and is tributary to upper Blackfoot River confluent between Slug Creek and Trail Creek from the north.
HUC# 17040208	Bakers Creek	16	(Table 2) Number of results = to the continuous or maximum criterion for selenium: Number of samples analyzed for selenium (Range of concentrations detected; all values rounded to next higher whole number)) Data are not sufficient to determine water quality violations. No listing warranted at this time.	Bakers Creek is associated with the Gay Mine and is in the headwater drainage of the Portneuf River, located within the Fort Hall Indian Reservation.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17040105SK007_02 This Spring Cr is in the Salt River HUC and has not been evaluated for metals impacts.	Spring Creek	16	(Table 1.) Number of results = to the continuous or maximum criterion for selenium: Number of samples analyzed for selenium (Range of concentrations detected; all values rounded to next higher whole number)	This is not the Spring Creek referenced in GYC's comments for metals impacts.
ID17040105SK007_02	Pole Canyon Creek	16	(Table 1.) Number of results = to the continuous or maximum criterion for selenium: Number of samples analyzed for selenium (Range of concentrations detected; all values rounded to next higher whole number)	See comments for Pole Canyon above. These are one and the same.
ID17040105SK007_02b	Spring Creek	16	(Table 1.) Number of results = to the continuous or maximum criterion for selenium: Number of samples analyzed for selenium (Range of concentrations detected; all values rounded to next higher whole number)	See comments for Spring Creek above.
ID17040105SK007_03	Spring Creek	16	(Table 1.) Number of results = to the continuous or maximum criterion for selenium: Number of samples analyzed for selenium (Range of concentrations detected; all values rounded to next higher whole number)	See comments for Spring Creek above.
ID17040207SK006_02a	Chicken Creek, tributary to Dry Valley Creek	16	One hundred percent of the samples collected from the listed creeks exceeded the criterion continuous concentration (CCC) of 5 µg/L selenium. All of the streams shown in Tables 1 and 2, with the exception of Montpelier and Bakers Creek, should be included in Section 5 with selenium listed as the pollutant. (See: Streams Listed from Tables 1 & 2 below.) Marti Bridges comments: "Regarding Marv Hoyt's comments about selenium I believe he is correct. We would be obligated to list	Add to section 5; listed pollutant is selenium.

AUs	Waterbody Name	Commentor	Comments	Responses
			regardless of if it is NPS or PS and prepare a TMDL unless we have a RCRA, CERCLA or consent decree for cleanup that accomplishes the same thing.” Pocatello Regional Office concurs with Marti’s comments. Data suggest violations of water standards and warrant listing.	
ID17040207SK006_02a	Chicken Creek	16	(Table 1.) Number of results = to the continuous or maximum criterion for selenium: Number of samples analyzed for selenium (Range of concentrations detected; all values rounded to next higher whole number)	See comment above.
ID17040207SK010	Blackfoot River – confluence of Lanes and Diamond Creeks to Blackfoot Reservoir	16	Please add this segment to Section 5	Data are not sufficient to warrant a listing of the entire reach of the Blackfoot River above the Blackfoot Reservoir. Evaluation of data collected in May 2003 (which was collected after the initial data assessment for formulation of the 2002 303(d) list) would suggest that at this time it is appropriate to list the reach of the Blackfoot River from its confluence with Spring Creek to the Upper narrows near the confluence of Mill Canyon Creek. This reach should be listed in Section 5.
ID17040207SK010_05	Blackfoot River upstream of Blackfoot Reservoir	16	(Table 2) Number of results = to the continuous or maximum criterion for selenium: Number of samples analyzed for selenium (Range of concentrations detected; all values rounded to next higher whole number)	See comment of mainstem Blackfoot River above.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17040207SK013	Dry Valley Creek – source to mouth, which includes Chicken Creek, a tributary of Dry Valley Creek; this stream segment should be listed from confluence of Maybe Creek to mouth, excluding Chicken Creek which is listed separately.	16	add to Section 5	Add to Section 5. Data indicate violations of water quality standards; listed pollutant is selenium.
ID17040207SK013_02	Dry Valley Creek	16	(Table 1.) Number of results = to the continuous or maximum criterion for selenium: Number of samples analyzed for selenium (Range of concentrations detected; all values rounded to next higher whole number)	See comment above.
ID17040207SK013_03	Dry Valley Creek	16	(Table 1.) Number of results = to the continuous or maximum criterion for selenium: Number of samples analyzed for selenium (Range of concentrations detected; all values rounded to next higher whole number)	See comment above.
ID17040207SK014	Maybe Creek – source to mouth	16	add to Section 5	Add to section 5; listed pollutant is selenium.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17040207SK014_02	Maybe	16	<p>One hundred percent of the samples collected from the listed creeks exceeded the criterion continuous concentration (CCC) of 5 µg/L selenium. All of the streams shown in Tables 1 and 2, with the exception of Montpelier and Bakers Creek, should be included in Section 5 with selenium listed as the pollutant. (See: Streams Listed from Tables 1 & 2 below.)</p> <p>Marti Bridges comments: “Regarding Marv Hoyt’s comments about selenium I believe he is correct. We would be obligated to list regardless of if it is NPS or PS and prepare a TMDL unless we have a RCRA, CERCLA or consent decree for cleanup that accomplishes the same thing.” Pocatello Regional Office concurs with Marti’s comments. Maybe Canyon Creek should be listed in section 5 for selenium.</p>	See comment for Maybe Creek above.
ID17040207SK014_02	Maybe Creek	16	<p>(Table 1.) Number of results = to the continuous or maximum criterion for selenium: Number of samples analyzed for selenium (Range of concentrations detected; all values rounded to next higher whole number)</p>	See comment for Maybe Creek above.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17040207SK015_02a	Upper Mill Canyon	16	According to the IDEQ document entitled, Public Comment Draft, Area Wide Risk Management Plan: Remedial Action Goals and Objectives, and Risk-based Action Levels for Addressing Releases from Historic Phosphate Mining Operations in Southeast Idaho, May 2003, the following streams also have been documented as exceeding the continuous maximum criterion (CMC) of 18 µg/L selenium and/or criteria continuous concentration (CCC) of 5 µg/L selenium: Maybe Creek, Dry Valley Creek, and Chicken Creek in the Blackfoot subbasin; Pole Canyon Creek and Sage Creek in the Salt subbasin; and Georgetown Creek in the Bear Lake subbasin.	Not sure which Mill Canyon this AU is referring to.
ID17040207SK015_02b	Lower Mill Canyon	16	(cont).... the following streams also have been documented as exceeding the continuous maximum criterion (CMC) of 18 µg/L selenium and/or criteria continuous concentration (CCC) of 5 µg/L selenium: Maybe Creek, Dry Valley Creek, and Chicken Creek in the Blackfoot subbasin; Pole Canyon Creek and Sage Creek in the Salt subbasin; and Georgetown Creek in the Bear Lake subbasin.	Not sure which Mill Canyon this AU is referring to.
ID17040207SK015_03	Lower Spring Creek, this AU should be defined as from the confluence with E. Mill Creek to mouth.	16	(cont) ...the following streams also have been documented as exceeding the continuous maximum criterion (CMC) of 18 µg/L selenium and/or criteria continuous concentration (CCC) of 5 µg/L selenium: Maybe Creek, Dry Valley Creek, and Chicken Creek in the Blackfoot subbasin; Pole Canyon Creek and Sage Creek in the Salt subbasin; and Georgetown Creek in the Bear Lake subbasin.	Add to section 5. Water quality data indicate violations of standards; listed pollutant is selenium.
		16	The following stream segments are identified in the <i>2002-03 Integrated 303(d)/305(b) Report</i> as impaired because they have been documented to contain concentrations of selenium that exceed the numeric criteria for selenium specified in Idaho's water quality standards, <i>IDAPA 58.01.02</i> :	Concur.

AUs	Waterbody Name	Commentor	Comments	Responses
			<p>ID17040207SK015_02a, “upper Mill Canyon”; ID17040207SK015_02b, “lower Mill Canyon”; and ID17040207SK015_03, “lower Spring Creek.”</p> <p>According to the IDEQ document entitled, <i>Public Comment Draft, Area Wide Risk Management Plan: Remedial Action Goals and Objectives, and Risk-based Action Levels for Addressing Releases from Historic Phosphate Mining Operations in Southeast Idaho, May 2003</i>, the following streams also have been documented as exceeding the continuous maximum criterion (CMC) of 18 µg/L selenium and/or criteria continuous concentration (CCC) of 5 µg/L selenium: Maybe Creek, Dry Valley Creek, and Chicken Creek in the Blackfoot subbasin; Pole Canyon Creek and Sage Creek in the Salt subbasin; and Georgetown Creek in the Bear Lake subbasin. Therefore, please add the following segments to Section 5 of the <i>2002-03 Integrated 303(d)/305(b) Report</i>: ID17040207SK013, “Dry Valley Creek—source to mouth,” which includes Chicken Creek, a tributary of Dry Valley Creek; ID17040207SK014, “Maybe Creek—source to mouth”; ID17040105SK08, “Crow Creek—source to Idaho/Wyoming border,” which includes Pole Canyon Creek; ID17040105SK09, “Sage Creek—source to mouth”; and ID16010201BR022, “Georgetown Creek—source to mouth.”</p>	
		16	<p>According to the <i>Final 2002 Supplement to 2001 Total Maximum Daily Load Baseline Monitoring Report</i>, prepared November 2002 by Tetra Tech EM for IDEQ, the average values for three samples collected during a four-day period between May 7 and May 11, 2002 at three sites on the Blackfoot River upstream of Blackfoot Reservoir were 7.0 µg/L, 7.0 µg/L, and 8.7 µg/L. These results</p>	Concur

AUs	Waterbody Name	Commentor	Comments	Responses
			exceeded the criteria continuous concentration of 5 µg/L selenium, indicating that the Blackfoot River should be listed as impaired due to selenium contamination. Please add segment number ID17040207SK010, "Blackfoot River – confluence of Lanes and Diamond Creeks to Blackfoot Reservoir" to Section 5 of the <i>2002-03 Integrated 303(d)/305(b) Report</i> .	
		16	A summary of selenium data reported from 1997 to 2002 by Montgomery Watson and the Idaho Mining Association, and by Tetra Tech EM and IDEQ (see Attachment, Tables 1 and 2), indicates that IDEQ has neither thoroughly nor consistently reviewed the data available to it for the purpose of determining which streams should be § 303(d)-listed for impairment due to selenium contamination. In fact, the logic used by IDEQ for listing streams that contain concentrations of selenium in excess of water quality standards defies analysis. This is apparent when comparing analytical data for streams a) recommended by IDEQ in the <i>Area Wide Risk Management Plan</i> for § 303(d)-listing, or b) identified by IDEQ in the <i>Area Wide Risk Management Plan</i> as exceeding water quality criteria for selenium and other mining-related metals on an episodic basis (Table 1), with analytical data for streams in which concentrations of selenium have frequently been detected (Table 2). One hundred percent of the samples collected from East Mill, Maybe, Pole Canyon, and Chicken Creeks exceeded the criterion continuous concentration (CCC) of 5 µg/L selenium, and one hundred percent of the samples collected from Maybe and Pole Canyon Creeks exceeded the criterion maximum concentration of 18 µg/L selenium. But the only	Concur.

AUs	Waterbody Name	Commentor	Comments	Responses
			<p>streams listed for selenium in the draft <i>2002-03 Integrated 303(d)/305(b) Report</i> are Upper Mill Creek and Lower Mill Creek (i.e., East Mill Creek) and Lower Spring Creek (i.e., Spring Creek). Maybe, Pole Canyon, and Chicken Creeks are not listed for selenium or other metals. Three streams were identified by IDEQ in the <i>Area Wide Risk Management Plan</i> as “exceeding water quality criteria for selenium and other mining-related metals on an episodic basis” on the basis of selenium criteria exceedances in zero percent of the samples from Montpelier Creek, 10 percent of the samples from Sage Creek, and 23 percent of the samples from Georgetown Creek (Table 1). But IDEQ did not identify an additional five streams as “exceeding water quality criteria for selenium and other mining-related metals on an episodic basis” despite exceedances of selenium criteria in 36 percent of the samples from the Blackfoot River above the reservoir, exceedances in 75 percent of the samples from Goodheart Creek, exceedances in 40 percent of the samples from No name Creek, exceedances in 40 percent of the samples from State Land Creek, and exceedances in 17 percent of the samples from Wooley Valley Creek (Table 2). Selenium occurred in both samples of water collected from Bakers Creek in 1998 and 1999, but Bakers Creek was not sampled again during any of the area wide studies. Regardless of these inconsistencies, all of the streams shown in Tables 1 and 2, with the exception of Montpelier and Bakers Creek, should be included in Section 5 of the draft <i>2002-03 Integrated 303(d)/305(b) Report</i> with selenium listed as the pollutant.</p>	
		16	<ul style="list-style-type: none"> • In regard to development of total maximum 	These AUs appear in Section 5 of the Integrated

AUs	Waterbody Name	Commentor	Comments	Responses
			<p>daily loads (TMDLs) for streams impaired by selenium, the Soda Springs Office of IDEQ makes the following statement on page 7 of the <i>Area Wide Risk Management Plan</i>:</p> <p style="padding-left: 40px;">In the resource area, the observed selenium releases in the proposed 303(d) listed streams can be traced back to individual mine sites and are occurring from non-point source discharges that are not currently required to be permitted. Due to sole source contributions and lack of permitting requirements, the Agency believes a formal TMDL process for the proposed selenium 303(d) listed streams would be a poor use of limited resources.</p> <p>The preparer of the <i>Area Wide Risk Management Plan</i> clearly does not understand the implications of adding a stream to Idaho's § 303(d) list, and the Soda Springs Office does not appear to be exchanging information with the Pocatello Regional Office or the Water Quality Division of IDEQ. Section 303(d) of the Clean Water Act requires States to prepare lists of impaired water bodies that do not support beneficial uses and therefore require development of total maximum daily loads (TMDLs). It is the responsibility of IDEQ to prepare</p>	<p>Report, and TMDLs have been scheduled as per the Principles and Policies Document. The sole fact that a waterbody is in Section 5 does not always mean a TMDL will be developed. The State of Idaho can choose to remove an AU based on "good cause." In 1998, the State of Idaho removed over 300 waters from the previous 1996 303(d) list on these grounds, and EPA upheld our action. Likewise, the 2002 Integrated Report removes some waters from Section 5 based on "good cause." This could apply to these selenium-impaired waters if, in the intervening time between Section 5 listing and the scheduled TMDL, other clean up efforts result in no further violations of WQS and in full support of the existing and designated beneficial uses of the AUs in question. Without doubt, these selenium impaired AUs will be in Section 5 of the Integrated Report until a TMDLS is developed and approved by EPA or the water is no longer impaired.</p>

AUs	Waterbody Name	Commentor	Comments	Responses
			TMDLs for § 303(d)-listed water bodies and to submit them to the U.S. Environmental Protection Agency for review and approval. As the results of numerous lawsuits have demonstrated during the past ten years, neither the State nor the U.S. Environmental Protection Agency has the discretion to decline to write a TMDL for a § 303(d)-listed waterbody that does not support its beneficial uses or that contains concentrations of contaminants that violate State numeric water quality criteria. Despite the belief on the part of IDEQ that “a formal TMDL process for the proposed selenium 303(d) listed [<i>sic</i>] streams would be a poor use of limited resources,” IDEQ and the U.S. Environmental Protection are obligated to ensure that TMDLs are prepared for § 303(d)-listed water bodies. Furthermore, because selenium concentrations in § 303(d)-listed streams can be traced to individual mine sites, and because contributions of selenium are “sole-source,” the TMDL-development process should be relatively simple.	
ID17050114SW001_ 06	Boise River-Indian Creek to Mouth	17	Should be removed from Section 3 and should be listed in Section 4a (sediment and bacteria TMDL; DEQ 2000); nutrients should be delisted in Section 5 (DEQ 2001a; DEQ 2001e), and temperature should be listed in Section 4c based on EPA’s addition to 1998 303(d) list (EPA 2001)).	ID17050114SW001_ 02 will be listed in Section 4a for sediment and bacteria. Nutrient delisting-SO? DEQ considers temperature (thermal modification) a pollutant. As such, it does not belong in Section 4c.
ID17050114SW001_ 06	Boise River-Indian Creek to Mouth	17	Should be listed in Section 4a (sediment and bacteria TMDL; DEQ 2000).	ID17050114SW001_ 02 will be listed in Section 4a for sediment and bacteria.
ID17050114SW001_ 06	Boise River-Indian Creek to Mouth	17	Should added to Section 4c (temperature) based on EPA’s addition to 1998 303(d) list (EPA 2001)) and DEQ’s TMDL (DEQ 2000).	DEQ considers temperature (thermal modification) a pollutant. As such, it does not belong in Section 4c.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW001_ 06	Boise River-Indian Creek to Mouth	17	Nutrient TMDL was deferred in 2000 TMDL (DEQ 2000). The SBA for nutrients (DEQ 2001a) concluded that beneficial uses were being met and should be delisted in Section 5. However, downstream Snake River-Hells Canyon TMDL will assign allocations to lower Boise River watershed ¹ (DEQ 2001e) within a TMDL framework. As part of this process, allocations will include tributaries to mainstem lower Boise River.	See footnote p. 89.
ID17050114SW001_ 06	Boise River-Indian Creek to Mouth	17	Bacteria and siltation information is correct. Temperature should have been included in Section 4c based on EPA's addition to 1998 303(d) list (EPA 2001), and was deferred for further analysis in TMDL (DEQ 2000). Nutrient TMDL was deferred in 2000 TMDL (DEQ 2000). The SBA for nutrients (DEQ 2001a) concluded that beneficial uses were being met and should be delisted in Section 5. However, downstream Snake River-Hells Canyon TMDL will assign allocations to lower Boise River watershed ¹ (DEQ 2001e) within a TMDL framework. As part of this process, allocations will include tributaries to mainstem lower Boise River.	DEQ considers temperature (thermal modification) a pollutant. As such, it does not belong in Section 4c. See footnote p. 89.

¹ The SBA for nutrients (DEQ 2001a) concluded that beneficial uses were being met and should be delisted in Section 5. However, downstream SN/Ake River-Hells Canyon TMDL will assign allocations to lower Boise River watershed (DEQ 2001e) within a TMDL framework. Thus, even though DEQ does not consider these segments themselves to be impaired for nutrients, nutrient reductions are necessary and enforceable to address downstream impairments. As part of this process, allocations will include tributaries to mainstem lower Boise River.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW002_04	Indian Creek – 4 th Order	17	Nutrients and oil/grease should be removed from Section 5 because being delisted (DEQ 2001b). DO levels are currently being monitored but no TMDL is required (DEQ 2001b). Bacteria has been recommended for listing in Section 5 (DEQ 2001b). Sediment is being monitored as reductions in mainstem are implemented but no TMDL is required (DEQ 2001b) ² . Depending on the outcome of the monitoring, this segment may be able to be moved to Section 4b for sediment in future updates to this report. Temperature should be listed in Section 5 based on EPA's addition to 1998 303(d) list (EPA 2001).	ID17050114SW002_04 will be removed from Section 5 for nutrients and oil/grease. ID17050114SW002_04 will be added to Section 5 for temperature and bacteria.
ID17050114SW003_02	Indian Creek – 1 st and 2 nd Order	17	Nutrients and sediment should be removed from Section 5 because being delisted (DEQ 2001b). Should be listed in Section 5 (temperature) based on EPA's addition to 1998 303(d) list (EPA 2001).	ID17050114SW003_02 will be removed from Section 5 for nutrients and sediment. ID17050114SW003_02 will be added to Section 5 for temperature.
ID17050114SW003_03	Indian Creek – 3 rd Order	17	Correct.	Comment noted.
ID17050114SW003_03	Indian Creek – 3 rd Order	17	Should be listed in Section 5 (temperature) based on EPA's addition to 1998 303(d) list (EPA 2001).	ID17050114SW003_03 will be added to Section 5 for temperature.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW003_04	Indian Creek – 4 th Order	17	Nutrients and oil/grease should be removed from Section 5 because being delisted (DEQ 2001b). DO levels are currently being monitored but no TMDL is required (DEQ 2001b). Bacteria has been recommended for listing in Section 5 (DEQ 2001b). Sediment is being monitored as reductions in mainstem are implemented but no TMDL is required (DEQ 2001b) ² . Depending on the outcome of the monitoring, this segment may be able to be moved to Section 4b for sediment in future updates to this report. Temperature should be listed in Section 5 based on EPA's addition to 1998 303(d) list (EPA 2001).	ID17050114SW003_04 will be removed from Section 5 for nutrients and oil/grease. ID17050114SW003_04 will be added to Section 5 for temperature
ID17050114SW004_06	Lake Lowell	17	Correct.	Comment noted.
ID17050114SW005_06	Boise River - RM 50 (T04N, R02W, Sec. 32) to Indian Creek	17	Should be removed from Section 3 and should be listed in Section 4a (sediment and bacteria TMDL; DEQ 2000); nutrients should be delisted in Section 5 (DEQ 2001a; DEQ 2001e), and temperature should be listed in Section 4c based on EPA's addition to 1998 303(d) list (EPA 2001)).	ID17050114SW005_02 will be listed in Section 4a for sediment and bacteria. See footnote p. 89. DEQ considers temperature (thermal modification) a pollutant. As such, it does not belong in Section 4c.
ID17050114SW005_06	Boise River - RM 50 (T04N, R02W, Sec. 32) to Indian Creek	17	Should listed in Section 4a (sediment and bacteria TMDL; DEQ 2000).	ID17050114SW005_02 will be listed in Section 4a for sediment and bacteria.
ID17050114SW005_06	Boise River - RM 50 (T04N, R02W, Sec. 32) to Indian Creek	17	Should added to Section 4c (temperature) based on EPA's addition to 1998 303(d) list (EPA 2001)) and DEQ's TMDL (DEQ 2000).	ID17050114SW005_02 will be added to Section 5 for temperature.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW005_06	Boise River - RM 50 (T04N, R02W, Sec. 32) to Indian Creek	17	Nutrient TMDL was deferred in 2000 TMDL (DEQ 2000). The SBA for nutrients (DEQ 2001a) concluded that beneficial uses were being met and should be delisted in Section 5. However, downstream Snake River-Hells Canyon TMDL will assign allocations to lower Boise River watershed ¹ (DEQ 2001e) within a TMDL framework. As part of this process, allocations will include tributaries to mainstem lower Boise River.	See footnote p. 89.
ID17050114SW005_06	Boise River - RM 50 (T04N, R02W, Sec. 32) to Indian Creek	17	Bacteria needs to be added as another 4a pollutant because a bacteria SBA and TMDL were also completed for this segment (DEQ 2000). The siltation information is correct.	ID17050114SW005_06 will be listed in Section 4a for bacteria.
ID17050114SW005_06	Boise River – RM 50 (T04N, R02W, Sec. 32) to Indian Creek	17	Should added to Section 4c (temperature) based on EPA’s addition to 1998 303(d) list (EPA 2001)) and DEQ’s TMDL (DEQ 2000).	DEQ considers temperature (thermal modification) a pollutant. As such, it does not belong in Section 4c.
ID17050114SW005_06	Boise River – RM 50 (T04N, R02W, Sec. 32) to Indian Creek	17	Nutrient TMDL was deferred in 2000 TMDL (DEQ 2000). The SBA for nutrients (DEQ 2001a) concluded that beneficial uses were being met and should be delisted in Section 5. However, downstream Snake River-Hells Canyon TMDL will assign allocations to lower Boise River watershed ¹ (DEQ 2001e) within a TMDL framework. As part of this process, allocations will include tributaries to mainstem lower Boise River.	See footnote p. 89.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW006_02	Mason Creek – 1 st and 2 nd Order	17	Should be removed from Section 5 because being delisted (nutrients, DO; DEQ 2001c). Bacteria has been recommended for listing in Section 5 (DEQ 2001c). DEQ concluded delisting for sediment in the SBAs based on MOD aquatic life uses where applicable (DEQ 2001c). Because numeric targets associated with these uses are in negotiation, a TMDL is not anticipated to be required but sediment should be kept in Section 5 and will continue to be monitored as reductions in mainstem are implemented ² . Depending on the outcome of the monitoring, this segment may be able to be moved to Section 4b for sediment in future updates to this report.	ID17050114SW006_02 will be removed from Section 5 for nutrients. DO and sediment will remain on Section 5 because the Modified beneficial use has not been approved by EPA. These pollutants are linked to the Modified beneficial use. Bacteria will be added to Section 5.
ID17050114SW007_02	Fifteenmile Creek - Miller Canal to mouth	17	Correct.	Comment noted.
ID17050114SW007_04	Fifteenmile Creek - Miller Canal to mouth	17	Correct.	Comment noted.
ID17050114SW008_02	Tenmile Creek - 1st and 2nd Order	17	Nutrients, DO, and sediment should be delisted from Section 5 (DEQ 2001b). Although DEQ has stated that “a large portion of [intermittent waters] are unassessed and can be found in Section 3”, this waterbody has undergone more extensive study than limited or no BURP data. Thus, because this waterbody should be delisted, it should be placed in Section 2.	ID17050114SW008_02 will be listed in Section 2.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW008_02	Tenmile Creek – 1st and 2nd Order	17	Should be removed from Section 5 because being delisted (nutrients, DO, sediment; DEQ 2001b). Although DEQ has stated that “a large portion of [intermittent waters] are unassessed and can be found in Section 3”, this waterbody has undergone more extensive study than limited or no BURP data. Thus, it should be placed in Section 2.	ID17050114SW008_02 will be listed in Section 2.
ID17050114SW008_03	Tenmile Creek – 3 rd Order	17	Nutrients and DO should be removed from Section 5 because being delisted (DEQ 2001b). Bacteria has been recommended for listing in Section 5 (DEQ 2001b). DEQ concluded delisting for sediment in the SBAs based on MOD aquatic life uses where applicable (DEQ 2001b). Because numeric targets associated with these uses are in negotiation, a TMDL is not anticipated to be required but sediment should be kept in Section 5 and will continue to be monitored as reductions in mainstem are implemented ² . Depending on the outcome of the monitoring, this segment may be able to be moved to Section 4b for sediment in future updates to this report.	ID17050114SW008_03 will be removed from Section 5 for nutrients. DO and sediment will remain on Section 5 because the Modified beneficial use has not been approved by EPA. These pollutants are linked to the Modified beneficial use. Bacteria will be added to Section 5.
ID17050114SW009_02	Blacks Creek - 1st and 2nd Order	17	Nutrients, DO, and sediment should be delisted from Section 5 (DEQ 2001d). Although DEQ has stated that “a large portion of [intermittent waters] are unassessed and can be found in Section 3”, this waterbody has undergone more extensive study than limited or no BURP data. Thus, because this waterbody should be delisted, it should be placed in Section 2.	Tier 1 data = NFS. Section 5 (unknown).

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW009_03	Blacks Creek - 3rd Order	17	Nutrients, DO, and sediment should be delisted from Section 5 (DEQ 2001d). Although DEQ has stated that “a large portion of [intermittent waters] are unassessed and can be found in Section 3”, this waterbody has undergone more extensive study than others with limited or no BURP data. Thus, because this waterbody should be delisted, it should be placed in Section 2.	Tier 1 data = NFS. Section 5 (unknown).
ID17050114SW009_02	Blacks Creek – 1 st and 2 nd Order	17	Should be delisted from Section 5 (DEQ 2001d). Although DEQ has stated that “a large portion of [intermittent waters] are unassessed and can be found in Section 3”, this waterbody has undergone more extensive study than others with limited or no BURP data. Thus, it should be placed in Section 2.	Tier 1 data = NFS. Section 5 (unknown)
ID17050114SW009_03	Blacks Creek – 3rd Order	17	Should be delisted from Section 5 (DEQ 2001d). Although DEQ has stated that “a large portion of [intermittent waters] are unassessed and can be found in Section 3”, this waterbody has undergone more extensive study than limited or no BURP data. Thus, it should be placed in Section 2.	ID17050114SW009_03 will be listed in Section 2.
ID17050114SW010_02	Fivemile Creek - 1 st and 2 nd Order	17	Nutrients, DO, and sediment should be delisted from Section 5 (DEQ 2001b). Although DEQ has stated that “a large portion of [intermittent waters] are unassessed and can be found in Section 3”, this waterbody has undergone more extensive study than others with limited or no BURP data. Thus, because this waterbody should be delisted, it should be placed in Section 2.	ID17050114SW010_02 will be listed in Section 2.
ID17050114SW010_02	Fivemile Creek – 1st and 2nd Order	17	Should be removed from Section 5 because being delisted (nutrients, DO, sediment; DEQ 2001b). Bacteria appears to have been erroneously added to Section 5. (While bacteria has been added to the	ID17050114SW010_02 will be listed in Section 2. Bacteria will be removed as a pollutant from this assessment unit.

AUs	Waterbody Name	Commentor	Comments	Responses
			downstream segment [DEQ 2001b], these two segments are hydrologically disconnected and there are no data to indicate impairment from bacteria in the upstream reach.) Although DEQ has stated that “a large portion of [intermittent waters] are unassessed and can be found in Section 3”, this waterbody has undergone more extensive study than others with limited or no BURP data. Thus, it should be placed in Section 2.	
ID17050114SW010_03	Fivemile Creek – 3 rd Order	17	Should be removed from Section 5 because being delisted (nutrients, DO; DEQ 2001b). Bacteria has been recommended for listing in Section 5 (DEQ 2001b). DEQ concluded delisting for sediment in the SBAs based on MOD aquatic life uses where applicable (DEQ 2001b). Because numeric targets associated with these uses are in negotiation, a TMDL is not anticipated to be required but sediment should be kept in Section 5 and will continue to be monitored as reductions in mainstem are implemented ² . Depending on the outcome of the monitoring, this segment may be able to be moved to Section 4b for sediment in future updates to this report.	ID17050114SW010_03 will be removed from Section 5 for nutrients. DO and sediment will remain on Section 5 because the Modified beneficial use has not been approved by EPA. These pollutants are linked to the Modified beneficial use. Bacteria will be added to Section 5.
ID17050114SW011a_06	Boise River – Diversion Dam to RM 50	17	Should added to Section 4c (temperature) based on EPA’s addition to 1998 303(d) list (EPA 2001)) and DEQ’s TMDL (DEQ 2000).	DEQ considers temperature (thermal modification) a pollutant. As such, it does not belong in Section 4c.

² DEQ concluded delisting for sediment in the SBAs based on MOD or CWB aquatic life uses where applicable (DEQ 2001b, 2001c, and 2000d). A TMDL is not anticipated to be required but sediment should be kept in Section 5 and will continue to be monitored as reductions in mainstem are implemented.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW011a_06	Boise River – Diversion Dam to RM 50	17	Nutrient TMDL was deferred in 2000 TMDL (DEQ 2000). The SBA for nutrients (DEQ 2001a) concluded that beneficial uses were being met and should be delisted in Section 5. However, downstream Snake River-Hells Canyon TMDL will assign allocations to lower Boise River watershed ¹ (DEQ 2001e) within a TMDL framework. As part of this process, allocations will include tributaries to mainstem lower Boise River.	See footnote p. 89.
ID17050114SW011a_02	Boise River - Diversion Dam to RM 50 (T04N, R02W, Sec. 32)	17	Should be removed from Section 3 and should be listed in Section 4a (sediment TMDL; DEQ 2000) and Section 4c (temperature) based on EPA's addition to 1998 303(d) list (EPA 2001)).	ID17050114SW011a_02 will be listed in Section 4a for sediment. DEQ considers temperature (thermal modification) a pollutant. As such, it does not belong in Section 4c.
ID17050114SW011a_02	Boise River - Diversion Dam to RM 50 (T04N, R02W, Sec. 32)	17	Should be listed in Section 4a (sediment TMDL; DEQ 2000).	ID17050114SW011a_02 will be listed in Section 4a for sediment.
ID17050114SW011a_02	Boise River - Diversion Dam to RM 50 (T04N, R02W, Sec. 32)	17	Should added to Section 4c (temperature) based on EPA's addition to 1998 303(d) list (EPA 2001)) and DEQ's TMDL (DEQ 2000).	DEQ considers temperature (thermal modification) a pollutant. As such, it does not belong in Section 4c.
ID17050114SW011a_03	Boise River - Diversion Dam to RM 50 (T04N, R02W, Sec. 32)	17	Should be removed from Section 3 and should be listed in Section 4a (sediment TMDL; DEQ 2000) and Section 4c (temperature) based on EPA's addition to 1998 303(d) list (EPA 2001)).	ID17050114SW011a_03 will be listed in Section 4a for sediment. DEQ considers temperature (thermal modification) a pollutant. As such, it does not belong in Section 4c.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW011a_03	Boise River - Diversion Dam to RM 50 (T04N, R02W, Sec. 32)	17	Should be listed in Section 4a (sediment TMDL; DEQ 2000).	ID17050114SW011a_03 will be listed in Section 4a for sediment.
ID17050114SW011a_03	Boise River - Diversion Dam to RM 50 (T04N, R02W, Sec. 32)	17	Should added to Section 4c (temperature) based on EPA's addition to 1998 303(d) list (EPA 2001)) and DEQ's TMDL (DEQ 2000).	DEQ considers temperature (thermal modification) a pollutant. As such, it does not belong in Section 4c.
ID17050114SW011a_06	Boise River - Diversion Dam to RM 50 (T04N, R02W, Sec. 32)	17	Correct.	Comment noted.
ID17050114SW011a_06	Boise River - Diversion Dam to RM 50 (T04N, R02W, Sec. 32)	17	Should added to Section 4c (temperature) based on EPA's addition to 1998 303(d) list (EPA 2001)) and DEQ's TMDL (DEQ 2000).	DEQ considers temperature (thermal modification) a pollutant. As such, it does not belong in Section 4c.
ID17050114SW011b_02	Boise River - Lucky Peak Dam to Diversion Dam	17	Should be removed from Section 3 because this segment is already listed in Section 4c (flow alteration).	ID17050114SW011b_02 will be removed from Section 3 and listed in Section 4c.
ID17050114SW011b_02	Boise River - Lucky Peak Dam to Diversion Dam	17	Correct.	Comment noted.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW012_02	Stewart Gulch, Cottonwood and Crane Creeks, source to mouth	17	<p>Should be moved from Section 5 to Section 3 because data for Cottonwood Creek consist of three BURP reports obtained during June of 1996 and 1997. These BURP stations are located within the upper part of the watershed that is intermittent (USGS Gage 13204640). Low macroinvertebrates populations resulted in low metric scores (MBI and SBI both in “Not Full Support” category). However, during spring runoff periods the seasonal macroinvertebrate communities are not yet well established and robust macroinvertebrate scores would not be expected. Finally, the Final WBAG (Grafe et al. 2002) indicates that aquatic community indexes should not apply to undesignated intermittent waterbodies. According to the limited USGS gage data (13204640), the upper reaches of Cottonwood Creek go dry for at least two months each summer. Thus, the existing biological data appear to be insufficient to support an attainment determination and this waterbody should be placed in Section 3 (EPA 2002b). If future BURP data are collected in the lower (possibly perennial) reaches of this waterbody, then this creek should be divided into separate reaches and assessed independently. In addition, no data are available for Stewart Gulch and Crane Creek, so they should be split into a different Assessment Unit.</p>	<p>DEQ will further review the applicable flow and water quality data for Cottonwood Creek, Crane Creek, and Stewart Gulch as part of the scheduled 2006 problem assessment. The option of splitting the assessment unit to exclude Stewart Gulch and Crane Creek will be evaluated at that time.</p>

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW012_02	Stewart Gulch, Cottonwood and Crane Creeks, source to mouth	17	Should be moved from Section 5 to Section 3 because data for Cottonwood Creek consist of three BURP reports obtained during June of 1996 and 1997. These BURP stations are located within the upper part of the watershed that is intermittent (USGS Gage 13204640). Low macroinvertebrates populations resulted in low metric scores (MBI and SBI both in “Not Full Support” category). However, during spring runoff periods the seasonal macroinvertebrate communities are not yet well established and robust macroinvertebrate scores would not be expected. Finally, the Final WBAG (Grafe et al. 2002) indicates that aquatic community indexes should not apply to undesignated intermittent waterbodies. According to the limited USGS gage data (13204640), the upper reaches of Cottonwood Creek go dry for at least two months each summer. Thus, the existing biological data appear to be insufficient to support an attainment determination and this waterbody should be placed in Section 3 (EPA 2002b). If future BURP data are collected in the lower (possibly perennial) reaches of this waterbody, then this creek should be divided into separate reaches and assessed independently. In addition, no data are available for Stewart Gulch and Crane Creek, so they should be split into a different Assessment Unit.	DEQ will further review the applicable flow and water quality data for Cottonwood Creek, Crane Creek, and Stewart Gulch as part of the scheduled 2006 problem assessment. The option of splitting the assessment unit to exclude Stewart Gulch and Crane Creek will be evaluated at that time.
ID17050114SW012_03	Stewart Gulch, Cottonwood and Crane Creeks, source to mouth	17	Should be moved from Section 5 to Section 3 because data for Cottonwood Creek consist of three BURP reports obtained during June of 1996 and 1997. These BURP stations are located within the upper part of the watershed that is intermittent (USGS Gage 13204640). Low macroinvertebrates populations resulted in low metric scores (MBI and SBI both in “Not Full Support” category). However,	DEQ will further review the applicable flow and water quality data for Cottonwood Creek, Crane Creek, and Stewart Gulch as part of the scheduled 2006 problem assessment. The option of splitting the assessment unit to exclude Stewart Gulch and Crane Creek will be evaluated at that time.

AUs	Waterbody Name	Commentor	Comments	Responses
			<p>during spring runoff periods the seasonal macroinvertebrate communities are not yet well established and robust macroinvertebrate scores would not be expected. Finally, the Final WBAG (Grafe et al. 2002) indicates that aquatic community indexes should not apply to undesignated intermittent waterbodies. According to the limited USGS gage data (13204640), the upper reaches of Cottonwood Creek go dry for at least two months each summer. Thus, the existing biological data appear to be insufficient to support an attainment determination and this waterbody should be placed in Section 3 (EPA 2002b). If future BURP data are collected in the lower (possibly perennial) reaches of this waterbody, then this creek should be divided into separate reaches and assessed independently. In addition, no data are available for Stewart Gulch and Crane Creek, so they should be split into a different Assessment Unit.</p>	

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW012_03	Stewart Gulch, Cottonwood and Crane Creeks, source to mouth	17	Should be moved from Section 5 to Section 3 because data for Cottonwood Creek consist of three BURP reports obtained during June of 1996 and 1997. These BURP stations are located within the upper part of the watershed that is intermittent (USGS Gage 13204640). Low macroinvertebrates populations resulted in low metric scores (MBI and SBI both in “Not Full Support” category). However, during spring runoff periods the seasonal macroinvertebrate communities are not yet well established and robust macroinvertebrate scores would not be expected. Finally, the Final WBAG (Grafe et al. 2002) indicates that aquatic community indexes should not apply to undesignated intermittent waterbodies. According to the limited USGS gage data (13204640), the upper reaches of Cottonwood Creek go dry for at least two months each summer. Thus, the existing biological data appear to be insufficient to support an attainment determination and this waterbody should be placed in Section 3 (EPA 2002b). If future BURP data are collected in the lower (possibly perennial) reaches of this waterbody, then this creek should be divided into separate reaches and assessed independently. In addition, no data are available for Stewart Gulch and Crane Creek, so they should be split into a different Assessment Unit.	DEQ will further review the applicable flow and water quality data for Cottonwood Creek, Crane Creek, and Stewart Gulch as part of the scheduled 2006 problem assessment. The option of splitting the assessment unit to exclude Stewart Gulch and Crane Creek will be evaluated at that time.
ID17050114SW013_02	Dry Creek - source to mouth	17	Correct.	Comment noted. Not assessed – Section 3.
ID17050114SW013_03	Dry Creek - source to mouth	17	Correct.	Comment noted.
ID17050114SW013_04	Dry Creek - source to mouth	17	Correct.	Comment noted.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW014_02	Big/ Little Gulch Creek complex	17	Correct.	Comment noted. Not assessed – Section 3.
ID17050114SW015_02	Willow Creek – source to mouth	17	Should include unknown based on 1998 303(d) list and temperature should be listed in Section 5 based on EPA’s addition to 1998 303(d) list (EPA 2001).	ID17050114SW015_02 will be added to Section 5 for temperature.
ID17050114SW015_03	Willow Creek – source to mouth	17	Should include unknown based on 1998 303(d) list and temperature should be listed in Section 5 based on EPA’s addition to 1998 303(d) list (EPA 2001).	ID17050114SW015_03 will be added to Section 5 for temperature.
ID17050114SW016_02	Langley/ Graveyard Gulch complex	17	The Langley/ Graveyard Gulch complex is not in the 17050114 HUC; it belongs in the 17050122 HUC (Lower Payette).	ID17050114SW016_02 will be moved to 17050122.
ID17050114SW016_03	Langley/ Graveyard Gulch complex	17	The Langley/ Graveyard Gulch complex is not in the 17050114 HUC; it belongs in the 17050122 HUC (Lower Payette)	ID17050114SW016_03 will be moved to 17050122.
ID17050114SW017_02	Sand Hollow Creek – source to mouth	17	Should be removed from Section 3 because being delisted from Section 5 (nutrients, DO; DEQ 2001c). Bacteria has been recommended for listing in Section 5 (DEQ 2001c) and sediment should be listed in Section 5 based on 1998 303(d) list.	ID17050114SW017_02 will be removed from Sections 3 and 5 for nutrients. Sediment will remain on Section 5 because EPA has not approved the Modified beneficial use. These pollutants are linked to the Modified beneficial use. Bacteria will be added to Section 5.
ID17050114SW017_02	Sand Hollow Creek – source to mouth	17	Should be removed from Section 5 because being delisted (nutrients, DO; DEQ 2001c). Bacteria has been recommended for listing in Section 5 (DEQ 2001c). Sediment is being monitored as further reductions are implemented but no TMDL is required (DEQ 2001c) ² . Depending on the outcome of the monitoring, this segment may be able to be moved to Section 4b for sediment in future updates to this report.	ID17050114SW017_02 will be removed from Section 5 for nutrients. Sediment and DO will remain on Section 5 because EPA has not approved the Modified beneficial use. These pollutants are linked to the Modified beneficial use. Bacteria will be added to Section 5.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050114SW017_03	Sand Hollow Creek – source to mouth	17	Should be removed from Section 5 because being delisted (nutrients, DO; DEQ 2001c). Bacteria has been recommended for listing in Section 5 (DEQ 2001c). Sediment is being monitored as further reductions are implemented but no TMDL is required (DEQ 2001c) ² . Depending on the outcome of the monitoring, this segment may be able to be moved to Section 4b for sediment in future updates to this report.	ID17050114SW017_03 will be removed from Section 5 for nutrients. Sediment and DO will remain on Section 5 because EPA has not approved the Modified beneficial use. These pollutants are linked to the Modified beneficial use. Bacteria will be added to Section 5.
ID17050114SW017_06	Sand Hollow Creek – source to mouth	17	Should be removed from Section 5 because being delisted (nutrients, DO; DEQ 2001c). Bacteria has been recommended for listing in Section 5 (DEQ 2001c). Sediment is being monitored as further reductions are implemented but no TMDL is required (DEQ 2001c) ² . Depending on the outcome of the monitoring, this segment may be able to be moved to Section 4b for sediment in future updates to this report.	ID17050114SW017_06 will be removed from Section 5 for nutrients. Sediment and DO will remain on Section 5 because EPA has not approved the Modified beneficial use. These pollutants are linked to the Modified beneficial use. Bacteria will be added to Section 5.
ID17050114SW011a_06	Mainstem Boise River	18	Correction to above letter #17: An error was pointed out to me after I submitted the letter to you on August 4h. The correction is to delete the words “but rather to pollution” from the bullet on page 2 entitled “Temperature Listing for Mainstem Boise River.” This correction is needed because the final TMDL for the Boise River concluded that natural conditions are responsible for temperature exceedances while the integrated report makes it clear that “pollution” is a human-caused alteration. Please take this correction into account as you finalize the integrated report.	Comment noted.

AUs	Waterbody Name	Commentor	Comments	Responses
		18	We recommend that the mainstem be delisted for nutrients but that Section 5 of the integrated list should explicitly include a footnote that references the SR-HC TMDL requirements pertinent to the Boise River (as well as other tributaries that may be affected by the allocation in the SR-HC TMDL).	See AU-based replies.
		18	We also concur with the delisting of Indian Creek, Fivemile and Tenmile Creeks, Mason Creek, and Sand Hollow Creek for nutrients for similar reasons, and recommend that Section 5 also contain the same SR-HC TMDL footnote.	See AU-based replies.
		18	EPA Region 10 has listed the mainstem for temperature (EPA 2001). However, DEQ concluded in the Lower Boise TMDL (DEQ 2000) that temperature exceedances were due primarily to solar warming rather than to discharges and that a temperature TMDL is not warranted for the mainstem river. As a result, temperature impairment is not due to a “pollutant” but rather to “pollution” and therefore these segments should be identified in Section 4c as related to temperature.	Section 4c is not appropriate for temperature. The EPA listed the Boise River from Diversion Dam to Indian Creek for temperature due to exceedances of the salmonid spawning temperature standard.

AUs	Waterbody Name	Commentor	Comments	Responses
		18	<p>Several tributaries to the Boise River meet the definition of an intermittent stream in the Water Quality Standards (WQS). According to Item 9 under “Relevant Policies” of the Integrated Report, DEQ has not yet developed standard assessment protocols applicable to intermittent streams and thus these streams are to be listed under Section 3. Thus, if BURP data were used to assess biological integrity on intermittent reaches, then these reaches should be listed in Section 3 and not in Section 5. In addition, the Final WBAG (Grafe et al. 2002) indicates that aquatic community indexes cannot be applied to undesignated, intermittent surface water bodies. This further supports the listing of intermittent creeks in Section 3 because the aquatic community indexes were the original basis for listing in the previous 303(d) list. If future BURP data are collected in lower (possibly perennial) reaches of such water bodies, then the water bodies should be divided into separate reaches and assessed independently</p>	<p>This is a very timely observation, and DEQ does need to do further work with intermittent streams. Numeric water quality standards only apply to intermittent waters during optimum flow periods sufficient to support the uses for which the waterbody is designated. For recreation, optimum flow is equal to or greater than five (5) cubic feet per second (cfs). For aquatic life uses, optimum flow is equal to or greater than one (1) cfs.</p> <p>Most low order assessment units (2nd order and maybe some 3rd) contain some intermittent waters; they are assessed as a unit, and the BURP site should be located in the perennial portion of the unit. Until such time data become available to delineate the intermittent portions of assessment units, DEQ can only make its best efforts to place monitoring sites in the perennial portions. When these intermittent units can be reliably delineated, then they must be monitored and assessed as WQS apply when they are live streams.</p>

AUs	Waterbody Name	Commentor	Comments	Responses
		18	Based on the UAAs, DEQ promulgated designated use changes for a number of segments within these tributaries and site-specific criteria for modified uses. In addition, DEQ prepared the SBAs under the assumption that these designated use changes and criteria were applicable because these changes in WQS have been approved by the Board of Environmental Quality, the State Legislature, and were incorporated into IDAPA 58.01.02 in 2002. In addition, the SBAs recommended delisting for certain pollutants for some segments. We believe that the UAAs and SBAs are technically sound and provide a solid foundation for decision-making for the Integrated Report. Therefore, we recommend that the Indian Creek, Fivemile and Tenmile Creeks, Mason Creek, Sand Hollow Creek, and Blacks Creek should be delisted for pollutants as noted below in Section 5. Although several of the upper segments of these water bodies are intermittent (and thus could be included in Section 3 as discussed above), we believe that the UAAs and SBAs provided more substantive assessments of attainment status and thus these intermittent segments should be moved to Section 2 instead	DEQ also believes the UAAs and SBAs are technically sound and provide a solid foundation for decision-making, but neither one is approved by EPA at this time. Because the approval/disapproval of the Integrated Report is a federal action, delisting of these segments will be disapproved by EPA although the action would comply with state law.
		18	The draft Integrated Report is so different from the previous 303(d) list that the schedule and priorities specified in the settlement Agreement are unclear, particularly in the context of changing Assessment Unit Boundary delineations.	Concur. DEQ has put together a better version of the Water Body Comment Web Site found of the Integrated Report page on DEQ's Web site.

AUs	Waterbody Name	Commentor	Comments	Responses
		18	federal and state listing requirements specify that waters will be listed based on minimum data requirements. The EPA additions to the 303(d) list for temperature (EPA 2001) appear to have been based on data that do not meet the 10 percent criteria exceedance rule stipulated in the final WBAG (Grafe et al. 2002). For example, EPA's listing for temperature in Indian Creek was based on instantaneous BURP data collected in four site visits in 1996 and 1997.	Agree. DEQ made these same arguments with EPA, and EPA chose to list the segments regardless. No minimum data standard is spelled out for the CWA or the Code of Federal Regulations supporting it. EPA's 1998 305(b) guidance suggests the 10% criteria exceedance.
		18	In each of these sections, specific reach segments have been identified differently than in previous lists, where water bodies were identified by known RM or otherwise easily-identifiable marker (e.g., Mason Creek - New York Canal to mouth). The current draft list relies on identification by stream order (e.g., Mason Creek – 1 st and 2 nd Order). This change in segment delineations is more consistent with the boundaries used in the Idaho WQS for designated uses. While we understand the technical basis for new delineations, the old method was easier to understand for non-technical stakeholders.	Agreed. DEQ has worked hard to build and provide tools that simplify communication and interaction with the public about AUs. New tools that cross-reference each USGS named waterbody with its associated AU are available and the 2004 Call for Data will include the location of these Web-based tools. Using familiar USGS-named streams is impractical as there are over 9,200 in Idaho. Even a printed cross-referenced list from USGS stream name to AU would be cumbersome to use as many stream names reoccur in different subbasins throughout the state.

AUs	Waterbody Name	Commentor	Comments	Responses
		18	In addition, in some cases the new method of identification changes the segment boundaries upon which previous assessments were based. For example, the mainstem lower Boise River between Diversion Dam and the mouth was originally broken into four segments, with the causes of impairment different in the upper two segments compared to the lower two. The draft Integrated Report still has four segments, but the inter-segment boundaries are not common to any of the previous boundaries. This change in boundaries leads to confusion in future proceedings. We recommend that the old delineation should be referenced (for example, "Boise River-Lucky Peak Dam to Diversion Dam" was previously identified as "Boise River-Lucky Peak Dam to Barber Diversion").	Agreed. DEQ produced and distributed a cross-referenced list between the 1998 list and the Draft 2002 Integrated Report to attempt to clarify these issues.
		18	DEQ has specified that waters wholly within wilderness and roadless areas should be placed in Section 1 of the Integrated Report. Although there are no such water bodies in the lower Boise River HUC, this stipulation likely underrepresents the number of Assessment Units that are assessed as fully supporting. There are many waters that flow almost entirely through wilderness and roadless areas that are not included on this list because they are not 100 percent contained within these areas. Finally, it appears that many wilderness lakes that fully support their beneficial uses were not included in Section 1 or Section 2 of the Integrated Report. This results in the unintended consequence of underreporting the percent of state waters that meet WQS.	Agreed. DEQ is looking at this policy and with regard to this comment and those of the City of Boise.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050101SW012_03a	Little Canyon Creek 3 rd	19	93SWIRO44 = NFS 93SWIRO45 = NFS 97SWIROC17 = FS 97SWIROC18 = NFS	Section 5 as in 1998 list.
ID17050101SW010_02	King Hill Creek 1 st , 2 nd , 3 rd	19	97SWIROC22 = FS	Tier I data = FS. Section 2.
ID17050101SW014_02	Cold Springs Creek 1 st , 2 nd , 3 rd	19	95SWIROA02 = NFS	Section 5 as in 1998 list.
ID17050101SW014_03	Cold Springs Creek 1 st , 2 nd , 3 rd	19	95SWIROA02 = NFS This stream was on the 1998 303(d) list, but has been omitted from this report.	Section 5 as in 1998 list.
ID17050101SW016_03	Bennett Creek 3 rd	19	93SWIRO54 = NFS 97SWIROC16 = NFS	Section 5 as in 1998 list.
ID17050102SW002_02	Jacks Creek 1 st thru 2 th	19	TMDL completed	Section 4a.
ID17050102SW002_03	Jacks Creek 3 rd	19	TMDL completed	Section 4a.
ID17050102SW002_04	Jacks Creek 4 th	19	TMDL completed	Section 4a.
ID17050102SW003_02	Little Jacks Creek 2 nd	19	TMDL completed	Section 4a.
ID17050102SW003_03	Little Jacks Creek 3 rd	19	TMDL completed	Section 4a.
ID17050102SW004_02	Big Jacks Creek 1 st , 2 nd , 3 rd	19	TMDL completed	Section 4a.
ID17050102SW004_03	Big Jacks Creek 1 st , 2 nd , 3 rd	19	TMDL completed	Section 4a.
ID17050102SW009	Bruneau River all orders	19	TMDL completed	Section 4a.
ID17050102SW009_06	Bruneau River	19	I believe a TMDL was completed for some of the streams listed.	Section 4a.
ID17050102SW011	Bruneau River all orders	19	TMDL completed	Section 4a.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050102SW013	Bruneau River all orders	19	TMDL completed	Section 4a.
ID17050102SW014_02	Sheep Creek 1 st , 2 nd	19		Not assessed. Section 3.
ID17050102SW014_03	Sheep Creek 3 rd	19	1998STWFA037 = FS	Tier 1 data = FS. Section 2.
ID17050102SW014_04	Sheep Creek 4 th	19	94SWIROA09 = NFS 94SWIROA11 = NFS 97SWIROB06 = NFS 97SWIROB07 = NFS	Section 5 (unknown).
ID17050102SW014_05	Sheep Creek 5 th	19		Not assessed. Section 3.
ID17050102SW020	Bruneau River all orders	19	TMDL completed	Section 4a
ID17050102SW028_02	Clover Creek all orders	19	TMDL completed	Section 4a.
ID17050102SW028_03	Clover Creek all orders	19	TMDL completed	Section 4a.
ID17050102SW030_04	Big Flat Creek 4 th	19	95SCIROB38 = NFS 95SCIROB45 = FS	Tier I data = FS. Section 2.
ID17050102SW031_02	Three Creek 1 st & 2 nd	19	TMDL completed	Section 4a.
ID17050102SW034_02	Deadwood Creek 1 st & 2 nd	19	95SCIROA51 = NFS 95SCIROA53 = FS	1998 BURP site is Not Full Support. See Bruneau SBA.
ID17050103SW002	Succor Creek 1 st , 2 nd , 3 rd	19	TMDL completed	Section 5 as in 1998 list.
ID17050103SW002_04	Succor Creek – 4 th Order	19	Remove unknown from section 5, add sediment. Succor Creek was listed for sediment on the 1998 list.	Section 5 as in 1998 list.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050103SW007_03	Squaw Creek – source to mouth	19	<p>Temperature needs to be added to section 5. EPA added it in 1998.</p> <p>However, we are going to propose de-listing temperature from the 2004 list. Should it be added to this list if we are going to eventually remove in 2004?</p>	Section 5 as in 1998 list.
ID17050103SW008_02	Hardtrigger Creek – 2 nd Order	19	<p>Remove unknown from section 5, add sediment. Hardtrigger was listed for sediment on the 1998 list.</p> <p>However, we are going to propose de-listing sediment from the 2004 list. Should it be added to this list if we are going to eventually remove in 2004?</p>	Section 5 as in 1998 list.
ID17050103SW009_03	Reynolds Creek 3 rd	19	<p>98SBOIA24 = FS</p> <p>98SBOIA25 = FS</p>	Section 5 as in 1998 list.
ID17050103SW014_03	Castle Creek – source to mouth	19	Remove bacteria from section 5. Bacteria was not listed on the 1998 list, nor have we collected data to indicate that it is in excess.	Section 5 as in 1998 list.
ID17050103SW019_02	Brown Creek – source to mouth	19	Temperature needs to be added to section 5. EPA added it in 1998. However, we are going to propose de-listing temperature from the 2004 list. Should it be added to this list if we are going to eventually remove in 2004?	Section 5 as in 1998 list.
ID17050103SW019_03	Brown Creek – source to mouth	19	Temperature needs to be added to section 5. EPA added it in 1998. However, we are going to propose de-listing temperature from the 2004 list. Should it be added to this list if we are going to eventually remove in 2004?	Section 5 as in 1998 list.
ID17050103SW019_04	Brown Creek – source to mouth	19	Temperature needs to be added to section 5. EPA added it in 1998. However, we are going to propose de-listing temperature from the 2004 list. Should it be added to this list if we are going to eventually remove in 2004?	Section 5 as in 1998 list.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050104SW001_05	Upper Owyhee River	19	TMDL completed	Tier I data = FS. Section 2.
ID17050104SW001_04	Upper Owyhee River	19	TMDL completed	Tier I data = FS. Section 2.
ID17050104SW001_03	Upper Owyhee River	19	TMDL completed	Tier I data = FS. Section 2.
ID17050104SW001_02	Upper Owyhee River	19	TMDL completed	Tier I data = FS. Section 2.
ID17050104SW013	Castle Creek 1 st & 2 nd	19	TMDL completed	Section 4a.
ID17050104SW013_02	Blue Creek source to reservoir dam	19	TMDL completed	Section 4a.
ID17050104SW025	Big Springs Creek 1 st thru 3 rd	19	99SBOIA016 = FS	Tier I data = FS. Section 2.
ID17050104SW028	Pole Creek 4 th	19	TMDL completed	Section 4a.
ID17050104SW031_03	Nickel Creek source to mouth	19	TMDL completed	Section 4a (Sediment). Section 5 (Temperature).
ID17050104SW031_04	Nickel Creek source to mouth	19	TMDL completed	Section 4a (Sediment). Section 5 (Temperature).
ID17050104SW033_02	Beaver Creek 1 st thru 4 th	19	99SBOIA006 = NFS	Tier I data = NFS. Section 5 (unknown).
ID17050105SW	SF Owyhee River	19	TMDL completed	Section 4a.
ID17050107SW006_02	Squaw Creek 1 st & 2 nd	19		Section 4a.
ID17050107SW006_03	Squaw Creek 3 rd	19	A TMDL has been completed for this stream. Also 97SWIROA36 = FS.	Tier I data = FS. Section 2
ID17050108SW013	Rock Creek 3 rd	19	96SWIROA21 = FS 96SWIROA22 = NFS 98SBOIB11 = FS 98SBOIB12 = FS	Tier 1 data = FS. Section 2.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050108SW015_02	Spring Creek source to mouth	19	This stream was not on the 1998 303(d) list, nor was it listed by the EPA. It is also not on the website.	Section 5 as in 1998 list. <i>Spring Creek</i> is a tributary to <i>Meadow Creek</i> , which was on the last list. <i>Meadow Creek</i> is in AU SW010 and is a tributary to <i>Rock Creek</i> , i.e., <i>Meadow Creek</i> has been put into the wrong AU. <i>Spring Creek</i> has never been monitored nor assessed.
ID17050108SW015_03	Spring Creek source to mouth	19	This stream was not on the 1998 303(d) list, nor was it listed by the EPA. It is also not on the website.	Section 5 as in 1998 list.
ID17050108SW021	Cow Creek 4 th	19	98SBOIB13 = FS	Section 5 as in 1998 list.
ID17050111SW008_02	Black Warrior Creek 1 st & 2 nd	19	93SWIRO40 = NFS 98SBOIB53 = FS	Tier I data = FS. Section 2.
ID17050111SW012_02	Bear River 1 st & 2 nd	19	93SWIRO38 = NFS 98SBOIA70 = FS 98SBOIA71 = FS	Tier I data = FS. Section 2.
ID17050112SW009_02	Mores Creek 1 st & 2 nd	19	Mores Creek was listed for temperature by the EPA in 2000.	Section 5 (Temperature).
ID17050112SW009_03	Mores Creek 1 st & 2 nd	19	Mores Creek was listed for temperature by the EPA in 2000.	Section 5 (Temperature).
ID17050112SW009_04	Mores Creek 1 st & 2 nd	19	Mores Creek was listed for temperature by the EPA in 2000.	Section 5 (Temperature).
ID17050112SW009_06	Mores Creek 1 st & 2 nd	19	Mores Creek was listed for temperature by the EPA in 2000.	Section 5 (Temperature).
ID17050112SW013_04	Grimes Creek 4 th	19	Listed by the EPA for temperature in 2000	Section 5 (Temperature).
ID17050112SW013_05	Grimes Creek 5 th	19	93SWIRO34 = NFS 93SWIRO35 = FS 95SWIROA65 = FS 98SBOIA73 = FS 98SBOIA74 = NFS 98SBOIA75 = NFS	Section 5 (Unknown).
ID17050112SW015_02	Macks Creek	19	This stream was on the 1998 303(d) list, but has been omitted from this report.	Tier I data = FS. Section 2.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050113SW001_06	Arrowrock Reservoir (Boise River)	19	There is no data in ADB for this listing. There is also nothing on the website to support this listing.	Not assessed. Section 3.
ID17050113SW002b_03	Willow Creek 3 rd	19	97SWIROA17 = NFS	Section 5 (Unknown).
ID17050113SW002b_04	Willow Creek 4 th	19		Section 5 (Unknown).
ID17050113SW003_02	Wood Creek 1 st & 2 nd	19	Stream is in SRB, 1260 m elevation, i.e., when put in proper ecoregion, = FS	Tier I data = FS. Section 2.
ID17050113SW003_03	Wood Creek 1 st & 2 nd	19	Stream is in SRB, 1260 m elevation, i.e., when put in proper ecoregion, = FS	Tier I data = FS. Section 2.
ID17050113SW003_03	Wood Creek 3 rd	19	97SWIROA16 = NFS	Tier I data = FS. Section 2.
ID17050113SW005_02	Anderson Ranch Reservoir 1 st & 2 nd	19	This assessment unit consists of 4 tributaries to the reservoir. The reservoir itself is not listed.	Section 5 (unknown).
ID17050113SW010	Lime Creek	19	Added by EPA in 2000 for temperature.	Section 5 (Temperature).
ID17050113SW010_02a	Moore's Creek	19	98SBOIA07 = NFS 98SBOIA08 = FS	Section 5 (Temperature).
ID17050113SW010_03a	Moore's Creek	19		Section 5 (unknown)
ID17050113SW012_02	Deer Creek	19	This stream was on the 1998 303(d) list, but has been omitted from this report.	Tier I data = FS. Section 2.
ID17050113SW018_02	Little Smokey Creek 4 th & 5 th	19	95TWFA062 = FS 95TWFA063 = NFS 95TWFA064 = FS 95TWFA065 = FS	Tier I data = FS. Section 2.
ID17050113SW022_02	Johnson Creek source to mouth	19	96TWFA035 = FS	Tier I data = FS. Section 2.
ID17050113SW027_03	Elk Creek (Feather River AU)	19	This stream was on the 1998 303(d) list, but has been omitted from this report.	Tier I data = FS. Section 2.
ID17050113SW027_04	Feather Creek 4 th	19	Should be Feather River. 96SWIROA63 = FS 96SWIROA64 = FS	Tier I data = FS. Section 2.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050113SW029_02	Green Creek source to mouth	19	95SWIROB29 = FS	Tier I data = FS. Section 2.
ID17050113SW032_03	Smith Creek 3 rd	19	99SBOIA038 = NFS	Section 5 (unknown).
ID17050114SW001_02	Dixie Drain	19	Added by EPA in 2000 for temperature.	Section 5 (Temperature).
ID17050114SW008_02	Tenmile Creek 1 st & 2 nd	19	97SWIROA03 = NFS 97SWIROA04 = NFS	Comment noted.
ID17050114SW011b_06	Boise River Lucky Peak Dam to Diversion Dam	19	Segment is listed for flow alteration. Move to Section 4c.	ID17050114SW011_6b will be listed in Section 4c.
ID17050114SW015_03	Willow Creek – source to mouth	19	There is no data for these intermittent streams. Move to Section 3.	ID17050114SW015_03 will be added to Section 5 for temperature.
ID17050115SW001_02	Snake River Boise River to Weiser River	19	TMDL completed	Section 5 as in 1998 list.
ID17050115SW001_06	Snake River Boise River to Weiser River	19	TMDL completed	Section 5 as in 1998 list.
ID17050120SW002_02	Rock Creek 2 nd	19	97SWIROC39 = FS 97SWIROC40 = FS	Tier I data = FS. Section 2.
ID17050120SW005_04	SF Payette River source to & including Trail Creek	19	This segment is entirely in wilderness and was removed from the list in 1998 by the EPA.	Section 1.
ID17050121SW003_02	Lightning Creek 1 st & 2 nd	19	97SWIROA71 = FS 98SBOIA76 = FS 98SBOIA77 = FS	Tier I data = FS. Section 2.
ID17050121SW010_02	Scriber Creek 1 st & 2 nd	19	98SBOIA44 = FS	Tier I data = FS. Section 2.
ID17050122SW003_06	Payette River confluence of the North & South Forks	19	This segment is not listed for any pollutants. Black Canyon Reservoir is listed for these pollutants.	Black Canyon Reservoir should remain in Section 5 for 1998 listed pollutants.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050123SW007_02	Cascade Reservoir	19	A TMDL has been completed for this watershed. There is also nothing on the website to support this listing.	Section 4a.
ID17050123SW008_02	Gold Fork River 1 st & 2 nd	19	98SBOIA32 = FS 98SBOIA57 = FS	Tier I data = FS. Section 2.
ID17050123SW008_05	Gold Fork 5 th	19	98SBOIA32 = FS 98SBOIA57 = FS	Section 4a.
ID17050123SW012_03	Lake Fork River - Little Payette Lake to Cascade Reservoir	19	TMDL completed	Section 4a.
ID17050123SW015_02	Mud Creek 1 st & 2 nd	19	97SWIROA12 = NFS 98SBOIA29 = NFS 98SBOIA30 = NFS 99SBOIA043 = NFS 99SBOIA044 = NFS	Section 4a.
ID17050123SW016_02	NF Payette River Payette Lake to Cascade Reservoir	19	TMDL completed	Section 4a.
ID17050123SW016_04	NF Payette River Payette Lake to Cascade Reservoir	19	TMDL completed	Section 4a.
ID17050123SW017_02	Payette Lake 1 st & 2 nd	19	This assessment unit consists of tributaries to the lake. The lake itself is not listed.	Section 5 as in 1998 list.
ID17050123SW017_02	Fall Creek (Payette Lake)	19	Added by EPA in 2000 for temperature.	Section 5 as in 1998 list.
ID17050123SW017_03	Fall Creek (Payette Lake)	19	Added by EPA in 2000 for temperature.	Section 5 as in 1998 list.
ID17050124SW002_02	Cove Creek 1 st & 2 nd	19	98SBOIB23 = NFS	Section 5 as in 1998 list.
ID17050124SW005_04	SF Crane Creek 4 th	19	98SBOI24 = NFS	Section 5 as in 1998 list.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050124SW027_02	Pine Creek 1 st , 2 nd , 4 th	19	97SWIROA13 = FS 97SWIROA14 = FS	Tier I data = FS. Section 2.
ID17050124SW027_04	Pine Creek 1 st , 2 nd , 4 th	19	97SWIROA13 = FS 97SWIROA14 = FS	Tier I data = FS. Section 2.
ID17050124SW032_02	Mann Creek source to reservoir	19	98SBOIB27 = FS 98SBOIB28 = FS	Tier I data = FS. Section 2.
ID17050124SW032_03	Mann Creek source to reservoir	19	98SBOIB27 = FS 98SBOIB28 = FS	Tier I data = FS. Section 2.
ID17050201SW015_04	Wildhorse River	19	Added by EPA in 2000 for temperature.	Section 5 (temperature).
ID17050201SW010_02	Rock Creek 1 st , 2 nd	19		Not assessed. Section 3.
ID17050201SW010_03	Rock Creek 3 rd	19		Not assessed. Section 3.
ID17050201SW010_04	Rock Creek 4 th	19	99SBOIA030 = NFS	Section 5 (unknown).
ID17050201SW011_02	Wolf Creek 1 st & 2 nd	19	99SBOIA024 = FS	Tier I data = FS. Section 2.
ID17050201SW014_02	Brownlee Creek 1 st & 2 nd	19		Tier I data = FS. Section 2.
ID17050201SW014_03	Brownlee Creek 3 rd	19		Not assessed. Section 3.
ID17050201SW014_04	Brownlee Creek 4 th	19	99SBOIA027 = FS	Tier I data = FS. Section 2.
ID17050201SW016_02	Bear Creek 1 st & 2 nd	19		Not assessed. Section 3.
ID17050201SW016_03	Bear Creek 3 rd	19		Not assessed. Section 3.
ID17050201SW016_04	Bear Creek 4 th	19	99SBOIA054 = FS	Tier I data = FS. Section 2.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060206SL012_04	Monumental Creek source to mouth	19	This boundary is incorrect. Should be W.F. Monumental Creek to mouth, i.e., the stream is on Section 5 source to mouth 2 nd and 3 rd order. General comment: there are many more streams in the region that are attaining all uses. I will provide a list if you like.	Section 5 as in 1998 list.
ID17060208SL009_02	Lick Creek 1 st & 2 nd	19	99SBOIA036 = FS	Tier I data = FS. Section 2.
ID17060208SL011_02	Fitsum Creek 1 st & 2 nd	19	99SBOIA033 = FS	Tier I data = FS. Section 2.
ID17060208SL012_02	Buckhorn Creek 1 st & 2 nd	19		Not assessed. Section 3.
ID17060208SL012_04	Buckhorn Creek 4 th	19	99SBOIA049 = FS	Tier I data = FS. Section 2.
ID17060208SL014_03	Blackmare Creek 3 rd	19	99SBOIA048 = FS	Tier I data = FS. Section 2.
ID17060208SL017_03	Trail Creek 3 rd	19	98SBOIA066 = FS 98SBOIA067 = FS	Tier I data = FS. Section 2.
ID17060208SL022_02	Camp Creek 1 st & 2 nd	19	99SBOIA032 = FS	Tier I data = FS. Section 2.
ID17060208SL023_02	EFSF Salmon River 1 st & 2 nd	19	The EPA has verbally Agree.d that this stream should be de-listed. Official confirmation may never be received.	Tier I data = FS. Section 2.
ID17060208SL023_03	EFSF Salmon River 3 rd	19	The EPA has verbally Agree.d that this stream should be de-listed. Official confirmation may never be received.	Tier I data = FS. Section 2.
ID17060208SL025_04	Johnson Creek 4 th	19	97SWIROB53 = FS 97SWIROB49 = FS 97SWIROB50 = FS 98SBOIA068 = FS	Tier I data = FS. Section 2.
ID17060208SL026_03	Burntlog Creek source to mouth	19	93SWIRO07 = FS	Tier I data = FS. Section 2.
ID17060208SL027_03	Trapper Creek 3 rd	19	99SBOIA021 = FS	Tier I data = FS. Section 2.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060208SL028_03	Riordan Creek source to mouth	19	93SWIRO17 = FS	Tier I data = FS. Section 2.
ID17060208SL032_03	Quartz Creek 3 rd	19	99SBOIA022 = FS	Tier I data = FS. Section 2.
ID17060208SL034_02	Elk Creek 1 st & 2 nd	19	99SBOIA047 = FS	Not assessed. Section 3.
ID17060208SL034_04	Elk Creek 4 th	19	99SBOIA047 = FS	Tier I data = FS. Section 2.
ID17060210SL008_02	Mud Creek 1 st & 2 nd	19	95SWIROB37 = FS	Tier I data = FS. Section 2.
ID17060210SL015_03	Hard Creek source to mouth	19	95SWIROC14 = FS	Tier I data = FS. Section 2.
ID17060206SL012_04	Monumental Creek source to mouth	19	<p>This boundary is incorrect. Should be W.F. Monumental Creek to mouth, i.e., the stream is on Section 5 source to mouth 2nd and 3rd order.</p> <p>General comment: there are many more streams in the region that are attaining all uses. I will provide a list if you like.</p>	AU applies only to mainstem Monumental Creek from West Fork Monumental Creek to confluence with Big Creek.
ID17050104SW034_02	Upper Owyhee River	19	TMDL completed	Is this all the Creeks in the Upper Owyhee TMDL?
ID17060206SL012_04	Monumental Creek source to mouth	19	<p>This boundary is incorrect. Should be W.F. Monumental Creek to mouth, i.e., the stream is on Section 5 source to mouth 2nd and 3rd order.</p> <p>General comment: there are many more streams in the region that are attaining all uses. I will provide a list if you like.</p>	The name is inaccurate.

AUs	Waterbody Name	Commentor	Comments	Responses
		20,21	DEQ must evaluate impairment of aesthetic values	WQS provide WQ criteria for aesthetics and wildlife beneficial uses and are met when the narrative WQ criteria are met. DEQ assesses waters of the state to determine whether fishable and swimable uses are supported and meet WQS, specifically including the narrative criteria. Therefore support of fishable and swimable uses indicates support of wildlife and aesthetics uses. DEQ has not, however, created guidance to determine the support status of wildlife and aesthetics, and for this reason has indicated these uses as not assessed. Addressing the wildlife and aesthetics uses in this manner is consistent with the mandates of the Clean Water Act and state law. DEQ is only obligated to place waters in Section 5 of the Integrated Report when data indicate the use is impaired. No data have been provided in the comment that indicates the wildlife or aesthetics uses as impaired for any AU.
ID17050101SW001_02	Snake River – Brown Creek to C.J. Strike Dam	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050101SW001_07	Snake River – Brown Creek to C.J. Strike Dam	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050101SW003_02	Browns Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050101SW003_03	Browns Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050101SW005_07	Snake River – Clover Creek to Browns Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050101SW006_02	Saylor Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050101SW006_03	Saylor Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050101SW008_02	Deadman Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050101SW012_02	Little Canyon Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050101SW013_02	Alkali Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050101SW013_03	Alkali Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050101SW016_02	Bennett Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050102SW003_02	Little Jacks Creek	20, 21	Add to TMDL list	Section 4a.
ID17050102SW003_04	Little Jacks Creek	20, 21	Add to TMDL list	Section 4a.
ID17050102SW003_02	Rattlesnake Creek	20, 21	Add to TMDL list	Section 4a.
ID17050102SW003_02	OX Prong Creek	20, 21	Add to TMDL list	Section 4a.
ID17050102SW003_03	OX Prong Creek	20, 21	Add to TMDL list	Section 4a.
ID17050102SW004_04	Big Jacks Creek	20, 21	Retain on 303d list	Section 4a.
ID17050102SW004_05	Big Jacks Creek	20, 21	Add to TMDL list	Section 4a.
ID17050102SW004_02	Willies Creek	20, 21	Add to TMDL list	Section 4a.
ID17050102SW005_02	Cottonwood Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050102SW007_02	Wickahoney Creek	20, 21	Retain on 303d list	Section 4a.
ID17050102SW007_03	Wickahoney Creek	20, 21	Retain on 303d list	Section 4a.
ID17050102SW008_02	Sugar Valley Creek	20, 21	Retain on 303d list	Section 4a.
ID17050102SW008_03	Sugar Valley Creek	20, 21	Retain on 303d list	Section 4a.
ID17050102SW009_06	Bruneau River	20, 21	Add to TMDL list	Section 4a.
ID17050102SW010_02	Hot Creek	20, 21	Retain on 303d list	Section 4a.
ID17050102SW010_03	Hot Creek	20, 21	Retain on 303d list	Section 4a.
ID17050102SW011_06	Bruneau River	20, 21	Add to TMDL list	Section 4a.
ID17050102SW013_05	Bruneau River	20, 21	Add to TMDL list	Section 4a.
ID17050102SW014_04	Sheep Creek	20, 21	Retain on 303d list	Section 5 (unknown).
ID17050102SW015_02	Louse Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050102SW015_02	Nanny Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050102SW015_02	China Creek	20, 21	Add to TMDL list	Not assessed. Section 3.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050102SW015_02	Nit Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050102SW015_03	Louse Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050102SW015_03	Crab Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050102SW016_02	Mary's Creek	20, 21	Retain on 303d list	Tier I data = NFS. Section 5 (unknown).
ID17050102SW016_02	Rattlesnake Creek	20, 21	Add to TMDL list	Tier I data = NFS. Section 5 (unknown).
ID17050102SW016_02	Trout Creek	20, 21	Add to TMDL list	Tier I data = NFS. Section 5 (unknown).
ID17050102SW017_02	Bull Creek an both Forks	20, 21	Add to TMDL list	Tier I data = FS. Section 2.
ID17050102SW017_03	Bull Creek an both Forks	20, 21	Add to TMDL list	Tier I data = FS. Section 2.
ID17050102SW018_02	Pole Creek	20, 21	Retain on 303d list	Tier I data = NFS. Section 5 (unknown).
ID17050102SW018_02	Black Leg Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050102SW018_02	Cottonwood Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050102SW018_02	Alder Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050102SW019_02	Cat Creek	20, 21	Retain on 303d list	Tier I data = NFS. Section 2 (unknown).
ID17050102SW020_05	Bruneau River	20, 21	Add to TMDL list	Section 4a.
ID17050102SW021_02	Columbet Creek	20, 21	Add to TMDL list	Tier I data = FS. Section 2.
ID17050102SW021_04	Columbet Creek	20, 21	Add to TMDL list	Tier I data = FS. Section 2.
ID17050102SW021_02	Rattlesnake Creek	20, 21	Add to TMDL list	Tier I data = FS. Section 2.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050102SW021_04	West Fork Jarbidge River	20, 21	Add to TMDL list	Tier I data = FS. Section 2.
ID17050102SW022_02	Cougar Creek	20, 21	Retain on 303d list	Section 4a.
ID17050102SW022_03	Cougar Creek	20, 21	Retain on 303d list	Section 4a.
ID17050102SW023_02	Dorsey Creek	20, 21	Add to TMDL list	Tier I data = NFS. Section 5 (unknown).
ID17050102SW023_03	Dorsey Creek	20, 21	Add to TMDL list	Tier I data = NFS. Section 5 (unknown).
ID17050102SW024_03	East Fork Jarbidge River	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050102SW025_02	Poison Creek	20, 21	Retain on 303d list	Section 4a.
ID17050102SW025_03	Poison Creek	20, 21	Retain on 303d list	Section 4a.
ID17050102SW030_02	Big Flat Creek	20, 21	Retain on 303d list	Tier I data = FS. Section 2.
ID17050102SW030_02	Spring Creek	20, 21	Add to TMDL list	Tier I data = FS. Section 2.
ID17050102SW030_02	Pole Creek	20, 21	Add to TMDL list	Tier I data = NFS. Section 5.
ID17050102SW030_02	Little Spring Creek	20, 21	Add to TMDL list	Tier I data = FS. Section 2.
ID17050102SW031_02	Three Creek	20, 21	Add to TMDL list	Section 4a.
ID17050102SW031_03	Three Creek	20, 21	Add to TMDL list	Section 4a.
ID17050102SW032_02	Cherry Creek	20, 21	Add to TMDL list	Two 95 BURP sites are NFS. ADB says FS?
ID17050102SW033_03	Deer Creek	20, 21	Retain on 303d list	Tier I data = NFS. Section 5 (unknown).
ID17050102SW034_02	Deadwood Creek	20, 21	Add to TMDL list	Two 95 BURP sites are NFS. ADB says FS?
ID17050102SW034_03	Deadwood Creek	20, 21	Add to TMDL list	Two 95 BURP sites are NFS. ADB says FS?
ID17050103SW001_07	Snake River - 7th Order	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW002_02	Succor Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW003_03	Succor Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW003_04	Succor Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW003_02	Coal Mine Basin Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050103SW003_02	Cottonwood Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW004_02	McBride Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW004_03	McBride Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW004_02	Dead Horse Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW004_02	Little McBride Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW004_02	Dry Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW005_02	Jump Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW005_03	Jump Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW006_02, (Not in Sec 5)	Sinker Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW007_02	Squaw Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW007_03	Squaw Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW008_02	Hardtrigger Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW009_02	Reynolds Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW009_03	Reynolds Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW009_04	Reynolds Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW009_02	Wilson Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW009_03	Wilson Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW009_02	Salmon Creek	20, 21	Add to TMDL list	Tier 1 data = FS. Section 2.
ID17050103SW009_03	Salmon Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW009_02	Cottle Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW009_02	Farrot Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW009_02	Murphy Creek	20, 21	Add to TMDL list	Tier 1 data = FS. Section 2.
ID17050103SW009_02	Macks Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW009_02	Alkali Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW009_02	Babington Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW009_02	Dobson Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050103SW009_02	Peters Gulch	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW009_02	Sheep Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW010_02	West Rabbit Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050103SW010_03	West Rabbit Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050103SW011_02	Rabbit Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050103SW011_03	Rabbit Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050103SW011_04	Rabbit Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050103SW011_02	Briar Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050103SW011_03	Briar Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050103SW012_02	Tiddie Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW012_02a	Horse Ranch Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW012_02a	Scotch Bob Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW012_02a, (Not in Sec 5)	Sinker Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW012_03 (Not in Sec 5)	Sinker Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW012_04 (Not in Sec 5)	Sinker Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW012_04	Birch Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW014_02	Castle Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW014_03	Castle Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW014_04	Castle Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW014_05	Castle Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW014_02a	Horsethief Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050103SW015_05	Catherine Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050103SW016	Cloudburst Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW016_02	Pickett Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW016_03	Pickett Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW016_03	Catherine Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW018_02	Hart Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050103SW018_03	Hart Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050103SW019_02	Brown Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW019_03	Brown Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW019_04	Brown Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW020_02	South Fork Castle Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW020_03	South Fork Castle Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW020_02	Magpie Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW020_02	Clover Creek	20, 21	Add to TMDL list	Section 5 as in 1998 list.
ID17050103SW021_02	Birch Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW021_03	Birch Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050103SW024_02	Shoofly Creek	20, 21	Retain on 303d list (not on 1998 list)	Poison Creek (a tributary) = NFS.
ID17050103SW024_02	Snow Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050103SW024_03	Shoofly Creek	20, 21	Retain on 303d list (not on 1998 list)	Not assessed. Section 3.
ID17050103SW025_02	Corder Creek	20, 21	Retain on 303d list	Section 5 as in 1998 list.
ID17050104SW001_04	East Fork Owyhee River	20, 21	Add to TMDL list	Tier I data = FS. Section 2.
ID17050104SW001_03	East Fork Owyhee River	20, 21	Add to TMDL list	Tier I data = FS. Section 2.
ID17050104SW001_02	East Fork Owyhee River	20, 21	Add to TMDL list	Tier I data = FS. Section 2.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050104SW001_02	Red Basin Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050104SW001_03	Red Basin Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050104SW003_04	Piute Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050104SW004_02	Juniper Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050104SW004_04	Juniper Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050104SW005_02	Juniper Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050104SW005L_0L	Juniper Basin Reservoir	20, 21	Add to TMDL list	Section 4a.
ID17050104SW007_03	Blue Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW007_04	Blue Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW007_5T	Blue Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW010_02	Payne Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050104SW010_03	Payne Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050104SW011_02	Squaw Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050104SW011_02	Indian Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050104SW011_02T	Indian Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050104SW011_02	Moorcastle Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050104SW012_02	Little Blue Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050104SW012_03	Little Blue Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050104SW013_03	Blue Creek	20, 21	Add to TMDL list	Section 4a.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050104SW014_02	Shoofly Creek	20, 21	Retain on 303d list	Delist bacteria. Put in Section 3.
ID17050104SW014_03	Shoofly Creek	20, 21	Retain on 303d list	Delist bacteria. Put in Section 3.
ID17050104SW014_04	Shoofly Creek	20, 21	Retain on 303d list	Delist bacteria. Put in Section 3.
ID17050104SW015_02	Harris Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050104SW015_03	Harris Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050104SW022_02	Yatahoney Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050104SW022_03	Yatahoney Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050104SW023_02	Battle Creek	20, 21	Retain on 303d list	Section 5 (temperature).
ID17050104SW023_03	Battle Creek	20, 21	Retain on 303d list	Section 5 (temperature).
ID17050104SW023_04	Battle Creek	20, 21	Retain on 303d list	Section 5 (temperature).
ID17050104SW023_02	Rock Creek	20, 21	Add to TMDL list	Section 5 (temperature).
ID17050104SW023_02	Hutch Springs	20, 21	Add to TMDL list	Section 5 (temperature).
ID17050104SW024_02	Dry Creek	20, 21	Add to TMDL list	Section 5 (unknown).
ID17050104SW025_02	Big Springs Creek	20, 21	Add to TMDL list	Tier I data = FS. Section 2.
ID17050104SW025_03	Big Springs Creek	20, 21	Add to TMDL list	Tier I data = FS. Section 2.
ID17050104SW026_02a	Anne Valley Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW026_03	Anne Valley Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW026_03a	Anne Valley Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW026_02a	Corral Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW026_02	Cow Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW026_02a	Current Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW026_03a	Current Creek	20, 21	Add to TMDL list	Section 4a.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050104SW026_02	Hurry Back Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW026_03	Hurry Back Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW026_04	Hurry Back Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW026_02	Hurry Up Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW026_02a	Nip and Tuck Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW026_03a	Nip and Tuck Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW026_02	Pleasant Valley Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW026_02	Stoneman Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW026_05	Deep Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW027_03	Dickshooter Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050104SW027_05	Dickshooter Creek	20, 21	Add to TMDL list	Not assessed. Section 3.
ID17050104SW028_02	Lightning Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW028_03	Pole Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW028_04	Pole Creek	20, 21	Add to TMDL list	Section 4a.
ID17050104SW029_02	Camas Creek	20, 21	Add to TMDL list	Tier I data = NFS. Section 5 (unknown).
ID17050104SW029_03	Camas Creek	20, 21	Add to TMDL list	Tier I data = NFS. Section 5 (unknown).
ID17050104SW030_02	Camel Creek	20, 21	Add to TMDL list	Tier I data = NFS. Section 5 (unknown).
ID17050104SW030_03	Camel Creek	20, 21	Add to TMDL list	Tier I data = NFS. Section 5 (unknown).
ID17050104SW030_02	Sunshine Valley Creek	20, 21	Add to TMDL list	Tier I data = NFS. Section 5 (unknown).
ID17050104SW031_02	Wilson Creek	20, 21	Add to TMDL list	Section 4a (Sediment). Section 5 (Temperature).

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050104SW031_02	Little Thomas Creek	20, 21	Add to TMDL list	Section 4a (Sediment). Section 5 (Temperature).
ID17050104SW031_02	Smith Creek	20, 21	Add to TMDL list	Section 4a (Sediment). Section 5 (Temperature).
ID17050104SW031_02	Little Smith Creek	20, 21	Add to TMDL list	Section 4a (Sediment). Section 5 (Temperature).
ID17050104SW031_02	Nickel Creek	20, 21	Add to TMDL list	Section 4a (Sediment). Section 5 (Temperature).
ID17050104SW031_03	Thomas Creek	20, 21	Add to TMDL list	Section 4a (Sediment). Section 5 (Temperature).
ID17050104SW031_03	Smith Creek	20, 21	Add to TMDL list	Section 4a (Sediment). Section 5 (Temperature).
ID17050104SW031_03	Nickel Creek	20, 21	Add to TMDL list	Section 4a (Sediment). Section 5 (Temperature).
ID17040104SK006_02	Fall Creek	22	Listed for Unknown - Should be listed for Sediment and Temperature. The forest has three years worth of data showing major exceedences. The size is listed as 72.67 miles. This is not correct.	Agree.; DRAFT TMDL in review.
ID17040104SK006_03	Fall Creek	22	Listed for Unknown - Should be listed for Sediment and Temperature. The forest has three years worth of data showing major exceedences.	Agree.; DRAFT TMDL in review.
ID17040104SK006_04	Fall Creek	22	Listed for Unknown –Should be listed for Sediment and Temperature. The forest has three years worth of data showing major exceedences.	Agree.; DRAFT TMDL in review.
ID17040104SK011_02	Bear Creek - TMDL Complete	22	Table 2. TMDL Complete – suggest moving to Section 4a	Agree.
ID17040204SK005_04	Moody Creek	22	Moody and its Forks should be listed for sediment.	DEQ has no Tier 1 data indicating this pollutant.
ID17040204SK042_02	Fox Creek	22	The Forest Service Submitted Thermograph data showing that even in warm, dry years water temperature at the state line is very cold. In 2000 the instantaneous high was 10.6 degrees Celsius.	Approved Temperature TMDL; move to Section 4a.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17040214SK018_02	Beaver Creek	22	Forest Service data shows that the instantaneous highs in 2000, 2001, and 2002 were 22.1, 20.2, and 23.9 degrees Celsius respectively. This equates to a 2%, 0%, and 15% exceedence frequency (5% cumulative). This meets the 10% threshold.	This AU should be listed as “not assessed.”
ID17040214SK018_04	Beaver Creek	22	Forest Service data shows that the instantaneous highs in 2000, 2001, and 2002 were 22.1, 20.2, and 23.9 degrees Celsius respectively. This equates to a 2%, 0%, and 15% exceedence frequency (5% cumulative). This meets the 10% threshold.	This AU carried forward from 1998 List.
ID17040215SK010_02	Edie Creek –	22	Sediment TMDL Complete - suggest moving to Section 4a	Agree.
ID17040215SK010_02	Edie Creek	22	Medicine Lodge TMDL recommended delisting for Nutrients. Move to Section 4a with TMDL complete for Sediment.	Agree.
ID17040215SK012_02	Irving Creek	22	Sediment TMDL Complete - suggest moving to Section 4a	Agree.
ID17040215SK012_03	Irving Creek	22	Sediment TMDL Complete - suggest moving to Section 4a	Agree.
ID17040215SK012_03	Irving Creek	22	Medicine Lodge TMDL recommended delisting for Nutrients. Move to Section 4a with TMDL complete for Sediment.	Agree.
ID17040215SK016_02	Fritz Creek	22	Medicine Lodge TMDL recommended delisting for Nutrients. Move to Section 4a with TMDL complete for Temperature.	Agree.
ID17040215SK020_02	Warm Springs Creek	22	Medicine Lodge TMDL recommended delisting for Nutrients & Sediment. Delisting would move segment from Section 5 to Section 2.	Agree.
ID17040215SK020_03	Warm Springs Creek	22	Medicine Lodge TMDL recommended delisting for Nutrients & Sediment. Delisting would move segment from Section 5 to Section 2.	Agree.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060207SL001_07	Salmon River	22	Four segments from Chamberlain Creek to River Mile 106. It was our understanding that this river group of segments was assessed in the Middle Salmon/Chamberlain Assessment and TMDL, and all were recommended for delisting. This is primarily a wilderness section of the Salmon River and segments up and downstream are not listed or recommended for listing. Delisting as wilderness would move segments from Section 5 to Section 1.	Agree.
ID17060207SL008_07	Salmon River	22	Four segments from Chamberlain Creek to River Mile 106. It was our understanding that this river group of segments was assessed in the Middle Salmon/Chamberlain Assessment and TMDL, and all were recommended for delisting. This is primarily a wilderness section of the Salmon River and segments up and downstream are not listed or recommended for listing. Delisting as wilderness would move segments from Section 5 to Section 1.	Agree.
ID17060207SL018_07	Salmon River	22	Four segments from Chamberlain Creek to River Mile 106. It was our understanding that this river group of segments was assessed in the Middle Salmon/Chamberlain Assessment and TMDL, and all were recommended for delisting. This is primarily a wilderness section of the Salmon River and segments up and downstream are not listed or recommended for listing. Delisting as wilderness would move segments from Section 5 to Section 1.	Agree.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060207SL037_07	Salmon River	22	Four segments from Chamberlain Creek to River Mile 106. It was our understanding that this river group of segments was assessed in the Middle Salmon/Chamberlain Assessment and TMDL, and all were recommended for delisting. This is primarily a wilderness section of the Salmon River and segments up and downstream are not listed or recommended for listing. Delisting as wilderness would move segments from Section 5 to Section 1.	Agree.
ID17060108CL027a_02	Big Creek – source to T42N R3W Sec 8	22	The following river segment description may be in error: listed as 5.23 miles, but is closer to 2.5 miles.	This is all of the 1 st & 2 nd order tributaries of Big Creek, WBID# 027a, in the Palouse. Please see DEQ's Web site for a graphical representation of the AU.
ID17060108CL027b_02	Big Creek – T42N R3W Sec 8 to mouth	22	The following river segment description may be in error: listed as 15.49 miles, but is 6.5.	See above; applies to WBID#027b and includes Last Chance Creek.
ID17060108CL030_02	Gold Creek – source to T42N R4W Sec 28	22	The following river segment description may be in error: listed as 19.96 miles, but is 5.1 miles.	This is all of the 1 st & 2 nd order tributaries of Gold Creek and Nelson Creek, WBID# 030, in the Palouse. Please see DEQ's Web site for a graphical representation of the AU. Further, the upper portion of this AU was delisted in 1998, but now the AU encompasses the section that remained on the list.
ID17060108CL032a_02	Deep Creek – source to T42NR5W Sec 2	22	The following river segment description may be in error: listed twice, with 23.76 and 0.63 miles. The legal description is where the East, Middle, and West Forks come together, and their combined length is approximately 18 miles.	This is all of the 1 st & 2 nd order tributaries of Deep Creek, including the East Fork of Deep Creek, WBID# 032a, in the Palouse. Please see DEQ's Web site for a graphical representation of the AU.
ID17060108CL032a_03	Deep Creek – source to T42NR5W Sec 2	22	The following river segment description may be in error: listed twice, with 23.76 and 0.63 miles. The legal description is where the East, Middle, and West Forks come together, and their combined length is approximately 18 miles	This is all of the 3rd order of Deep Creek, WBID# 032a, in the Palouse. Please see DEQ's Web site for a graphical representation of the AU.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060207SL001_07	Salmon River	22	Four segments from Chamberlain Creek to River Mile 106. It was our understanding that this river group of segments was assessed in the Middle Salmon/Chamberlain Assessment and TMDL, and all were recommended for delisting. This is primarily a wilderness section of the Salmon River and segments up and downstream are not listed or recommended for listing. Delisting as wilderness would move segments from Section 5 to Section 1.	Agree. All pollutants were removed, but, in the assessment process, the support status of the Cold Water Aquatic Life Use was left as not supporting. This has been corrected and the segment now appears in Section 2 of the Integrated Report.
ID17060207SL008_07	Salmon River	22	Four segments from Chamberlain Creek to River Mile 106. It was our understanding that this river group of segments was assessed in the Middle Salmon/Chamberlain Assessment and TMDL, and all were recommended for delisting. This is primarily a wilderness section of the Salmon River and segments up and downstream are not listed or recommended for listing. Delisting as wilderness would move segments from Section 5 to Section 1.	Agree. All pollutants were removed, but, in the assessment process, the support status of the Cold Water Aquatic Life Use was left as not supporting. This has been corrected and the segment now appears in Section 2 of the Integrated Report.
ID17060207SL018_07	Salmon River	22	Four segments from Chamberlain Creek to River Mile 106. It was our understanding that this river group of segments was assessed in the Middle Salmon/Chamberlain Assessment and TMDL, and all were recommended for delisting. This is primarily a wilderness section of the Salmon River and segments up and downstream are not listed or recommended for listing. Delisting as wilderness would move segments from Section 5 to Section 1.	Agree. All pollutants were removed, but, in the assessment process, the support status of the Cold Water Aquatic Life Use was left as not supporting. This has been corrected and the segment now appears in Section 2 of the Integrated Report.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060207SL037_07	Salmon River	22	Four segments from Chamberlain Creek to River Mile 106. It was our understanding that this river group of segments was assessed in the Middle Salmon/Chamberlain Assessment and TMDL, and all were recommended for delisting. This is primarily a wilderness section of the Salmon River and segments up and downstream are not listed or recommended for listing. Delisting as wilderness would move segments from Section 5 to Section 1.	Agree. All pollutants were removed, but, in the assessment process, the support status of the Cold Water Aquatic Life Use was left as not supporting. This has been corrected and the segment now appears in Section 2 of the Integrated Report.
ID17060302CL006_02	Selway River – Meadow Creek to Ohara Creek	22	The following river segment description may be in error: We believe this stream may have been listed in error. The Selway River is noted in the table on Page 20 as not recommended for listing, with the reasons given as apriori natural and less than 10% exceedence. Also, the reaches of the Selway River just upstream and downstream are listed in Section 3 of the Report.	This AU contains the 2 nd order tributaries to the Selway from Meadow Creek to Ohara Creek, not the Selway Proper, which is the 6 th order and is listed in Section 3.
ID17060303CL009_02	Holly Creek – and tributaries	22	We believe this stream may have been listed in error. It may have been the intent of DEQ to list the Lochsa River instead. Holly Creek is a roadless stream, 22.8 miles in length, including its tributaries. The 303d list "size" for Holly Creek as 66.11 miles. This is the approximate length of the Lochsa River. We believe DEQ should remove Holly Creek from the 303d List and add the Lochsa River (If that was their original intent).	Holly Creek appeared in Section 5 due to a data-entry error. Holly Creek was found to be supporting beneficial uses and will be listed in Section 2.
ID17060305	South Fork Clearwater River and tributaries.	22	The South Fork Clearwater River Subbasin Assessment and TMDLs is currently in a public review draft phase. It is our understanding that once this TMDL is approved by EPA, the streams in this part of Section 5 would be moved to Section 4a of the Report.	Once EPA approves the SF Clearwater River SBA and TMDL, these segments will be placed in Section 4a.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060306CL026_02	Lolo Creek – Yakus Creek to mouth	22	Listed for "Unknown." See comment 13 above. The above listed parameters should apply to Lolo Creek - Yakus Creek to mouth. The "Unknown" pollutant is not appropriate for this stream. Lolo Creek is one of the most studied streams in the State of Idaho, with past and current monitoring by the Nez Perce Tribe, Fish and Game, DEQ, BLM, and FS. In conclusion, DEQ should not list Lolo Creek above Yakus Creek and should list Lolo Creek - Yakus Creek to mouth for bacteria, nutrients, oil and grease, inorganics, sediment, and temperature.	Concur. Further DEQ monitoring confirms the impairment of the beneficial use. Pollutants were carried forward from the 1998 303(d) list. Unknown inadvertently replaced the previously listed pollutants.
ID17060306CL028_02	Lolo Creek – source to Yakus Creek	22	Listed for bacteria, nutrients, oil and grease, inorganics, sediment, and temperature. We believe DEQ has listed this portion of Lolo Creek in error. Lolo Creek (Headwaters to Eldorado Creek) was not listed on the 1998 List; however, Lolo Creek below Eldorado Creek was listed for the above parameters. We believe it is the intent of DEQ to list Lolo Creek below Yakus Creek and not above Yakus Creek. This correction would most approximate the 1998 303d List.	This is a carry-over AU from the 1998 303(d) list. Monitoring data at the time indicated impairment of the beneficial use. Sediment has been identified as the cause.
ID17060306CL028_04	Lolo Creek – source to Yakus Creek	22	Listed for bacteria, nutrients, oil and grease, inorganics, sediment, and temperature. We believe DEQ has listed this portion of Lolo Creek in error. Lolo Creek (Headwaters to Eldorado Creek) was not listed on the 1998 List; however, Lolo Creek below Eldorado Creek was listed for the above parameters. We believe it is the intent of DEQ to list Lolo Creek below Yakus Creek and not above Yakus Creek. This correction would most approximate the 1998 303d List.	This is a carry-over AU from the 1998 303(d) list. The likely cause of confusion over this listing is the boundaries of the previous segment vs. the new extent of the assessment unit.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060306CL028_04	Lolo Creek – source to Yakus Creek.	22	Listed for habitat alteration and flow alteration. See comments 13 and 14 above for Section 5. Again, we believe DEQ has listed Lolo Creek source to Yakus Creek in error. Lolo Creek - Yakus Creek to mouth is the portion of stream that has historically been listed for habitat and flow alteration. DEQ should make this correction.	See above.
ID17060306CL049_02	Potlatch River – headwaters and tributaries	22	The following river segment description may be in error: listed as 61.71 miles. The distance of the mainstem upstream of Moose Cr is about 8 miles, and there are a number of named tributaries - West Fork Potlatch, Cougar Cr, Talapus, Feather Cr, Laguna Cr, nat Brown and Purdue - but they do not add up to 61 miles. If this is meant to include all waters above Moose Cr, then another description should be used.	See previous explanation of AU total mileages. Additionally, descriptions will be more accurate for the 2004 IR.
ID17060306CL049_03	Potlatch River – source to Moose Cr	22	The following river segment description may be in error: listed with 5.3 and 3.7 miles. It does total about 8.1 miles. The two listings give different pollutants: both are listed for nutrients, sediment and temperature; but 03 lists pathogens, while 04 lists bacteria.	See above. The differences likely arise from a difference in pollutants between previous listing that are now combined into one AU.
ID17060306CL049_04	Potlatch River – source to Moose Cr	22	The following river segment description may be in error: listed with 5.3 and 3.7 miles. It does total about 8.1 miles. The two listings give different pollutants: both are listed for nutrients, sediment and temperature; but 03 lists pathogens, while 04 lists bacteria.	See above.
ID17060306CL051_04	East Fork Potlatch River – source to mouth	22	The following river segment description may be in error: listed as 4.73 miles. That distance is more like 20.5 miles. The distance from Ruby Cr to the mouth is closer to the 4.73 miles.	See previous explanation of AU total mileage's. Additionally descriptions will be more accurate for the 2004 IR.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060306CL052_03	Ruby Creek – source to mouth	22	The following river segment description may be in error: was listed as 2.14 miles. The distance is 5.94 miles. The 1998 list was for Ruby Creek to an unnamed trib 3.4 km upstream of the East Fork, which would be 2.14 miles, but then the descriptor is incorrect.	See above.
ID17060306CL053_02	Moose Creek – source to mouth	22	The following river segment description may be in error: listed with different mileages, 3.7 and 15.72 miles. The length is more like 6.5 miles.	See above.
ID17060306CL053_03	Moose Creek – source to mouth	22	The following river segment description may be in error: listed with different mileages, 3.7 and 15.72 miles. The length is more like 6.5 miles.	See above.
ID17060306CL054_02	Corral Creek – source to mouth	22	The following river segment description may be in error: listed as 7.57 and 22.29 miles. The West Fork of Corral Cr is about 2.9 miles, East Fork Corral is 5.21 miles, and the main Corral Creek totals 11.44.	See above.
ID17060306CL054_03	Corral Creek – source to mouth	22	The following river segment description may be in error: listed as 7.57 and 22.29 miles. The West Fork of Corral Cr is about 2.9 miles, East Fork Corral is 5.21 miles, and the main Corral Creek totals 11.44.	See above.
ID17060307CL001_02a	Sneak Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	Forest Plans are not equivalent to State WQS, nor are Forest Plans enforceable. While this approach is sound in many ways, “good cause” as defined in the Principles and Policies document cannot be demonstrated in order to remove a waterbody from Section 5. These proposed criteria could be used as a basis to move waterbodies to Section 4b in the 2004 Integrated Report once DEQ has conducted a public comment on a Section 4b policy.
ID17060307CL005_02a	Tamarack Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL007_02a	Sylvan Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060307CL011_04	Weitas Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL012_02	Middle Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL021_02	Gravey Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL021_02a	Marten Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL021_03	Gravey Creek (Roadless)	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL021_03a	Gravey Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL029_02	Little Moose Creek (Roadless)	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL030_02	Osier Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL030_02a	Sugar and Pollock Creeks	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL030_03	Osier Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL032_02a	Deception Gulch Creek (Recommend leave listed for sediment)	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060307CL033_03	Lake Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL039_02	Elizabeth Creek (Roadless)	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL040_02	Cold Springs Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL040_02a	Middle Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL040_03a	Middle Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL043_02	Rock Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL044_02a	Grizzly Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL044_03	Quartz Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL045_02	Cougar Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL046_04	Skull Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060307CL047_04	Skull Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17060307CL048_03	Collins Creek (Roadless)	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID17060308CL010_03	Isabella Creek	22	Listed for Temperature yet protective measures or needed restoration work has been completed by the Forest Service	See above.
ID1706060306CL048_04	Potlatch River – Moose Cr to Corral Cr	22	The following river segment description may be in error: listed with different mileages, 6.66 and 7.7 miles. That distance is closer to 13.99 miles. Is there some other tributary that splits these two sections?	The East Fork of the Potlatch River (ID17060306CL051_04) splits this section of the Potlatch River and changes the stream order from 04 to 05 and, therefore, splits the Potlatch River from Moose Creek to Corral Creek into two distinct AUs.
ID1706060306CL048_05	Potlatch River – Moose Cr to Corral Cr	22	The following river segment description may be in error: listed with different mileages, 6.66 and 7.7 miles. That distance is closer to 13.99 miles. Is there some other tributary that splits these two sections?	The East Fork of the Potlatch River (ID17060306CL051_04) splits this section of the Potlatch River and changes the stream order from 04 to 05 and, therefore, splits the Potlatch River from Moose Creek to Corral Creek into two distinct AUs.
		22	River segments occurring entirely or mostly on National Forest System (NFS) lands that are listed for temperature and where protective measures have been applied or needed restoration work has been conducted should be removed from the State of Idaho list of Impaired Waters. Those waters where management actions are creating unnatural temperature increases above State approved standards should continue to be listed.	These waterbodies must be either EPA approved TMDLs or DEQ must demonstrate “good cause” for removing water bodies from Section 5 of the Integrated Report that were on previous 303(d) lists (pursuant to 40 CFR 130.7(b)(6)(iv)).

AUs	Waterbody Name	Commentor	Comments	Responses
		22	<p>Riparian areas (riparian habitat conservation areas) are protected using measures applied to prevent adverse impacts on water and aquatic resources as per PACFISH/INFISH guidelines. Forests in Idaho have either amended their Forest Plans to reflect the PACFISH/INFISH guidelines or revised their Forest Plans with even more conservative goals, objectives, guidelines, and standards. Riparian Management Objectives (RMOs) defined by these amendments must be fully implemented. Consequently, Forest Plan direction constitutes an appropriate foundation for a temperature TMDL Implementation Plan. Therefore, we recommend that river segments listed for temperature that meet the following criteria be removed from the State of Idaho list of Impaired Waters:</p> <ul style="list-style-type: none"> • The source area is dominated by NFS lands, i.e. >85% NFS in the watershed and in the riparian habitat conservation area (RHCA). • Management activities are limited to those associated with forest vegetation management. • Riparian management that follows the policies established by the PACFISH/INFISH amendments or more stringent direction as stated in the Forest Plans. • Active riparian restoration affecting water temperature is not needed or has been completed in the watershed. <p>The waterbody is currently listed for temperature only.</p>	<p>Forest Plans are not equivalent to State WQS, nor are Forest Plans enforceable. While this approach is sound in many ways, “good cause” as defined in the Principles and Policies document cannot be demonstrated in order to remove a waterbody from Section 5. These proposed criteria could be used as a basis to move water bodies to Section 4b in the 2004 Integrated Report once DEQ has conducted a public comment on a Section 4b policy.</p>

AUs	Waterbody Name	Commentor	Comments	Responses
		23	DEQ should have provided a map showing each of the streams segments and coding them for color. The back and forth with the charts is difficult and the document's readability is seriously compromised by the lack of a comprehensive map.	With well over 5000 AUs, this request is only possible to fulfill through DEQ's Web site, not on paper. DEQ provided tools to support the public's ability to comment on the Integrated Report. Based on public comment, DEQ has further developed and simplified these tools.
		23	Why are many of the streams listed as not having been assessed? These seem to include segments that include or are adjacent to stream segments that are impaired waterways. Some of the streams include Brushy Fork, Lolo Creek, Red River, South Fork Clearwater, North Fork Clearwater, Potlatch Creek, Skull Creek, Quartz Creek and the St. Joe River. This list is huge and contains many crucial water bodies known to exceed forest plan standards.	Names of individual AUs can be misleading. Streams appearing in Section 3 have not been monitored by DEQ and/or no outside information was available at the time of assessment. Forest Plan Standards are not State WQS, and Forest Plan Standards do not indicate any measure of beneficial use support status. As such, DEQ is not listing or delisting waters based on Forest Plan Standards.
		23	The habitat alteration/flow section is misleading. For example, upper Lolo Creek (above Yakus Creek) is entirely on the Clearwater National Forest and there are no irrigation dams on it. The reason for its impairment is the same as other streams that are listed as impaired and need TMDLs--Forest Service roads and logging. Putting the upper Lolo Creek in that category prevents it from being a 303(d) stream when it should be so listed.	The 2 nd order portion of Lolo Creek (ID17060306CL028_02) is listed for sediment. The 4 th order portion of Lolo Creek (ID17060306CL028_04) is listed for Bacteria, Organic enrichment/Low DO, Flow alteration, Other habitat alterations, Nutrients, Oil and grease, Siltation, & Thermal modifications. When this occurs, this AU will show up in multiple portions of the Integrated Report: Section 4c for flow and habitat alteration and Section 5 for the other pollutants.
		23	have all of the TMDLs listed in the charts been approved by EPA?	This was an error and has been rectified. In the draft version of the Integrated Report, the approval date was propagated to each pollutant of an AU inadvertently. The final Integrated Report correctly shows AUs with EPA approved TMDLs.

AUs	Waterbody Name	Commentor	Comments	Responses
		23	The methodology of the frequently-cited BURP, CWE and WBAG II processes are questionable. It certainly appears to us these processes were designed as a way to remove streams that had been listed. We are not aware that BURP has been peer-reviewed or accepted by the scientific community. How can we have confidence in its scientific validity?	This was addressed in the WBAG2 Response to Comments Document that can be found here: http://www.deq.state.id.us/water/surface_water/wbag/WBAG2001_Response_Sec2-Sec3.pdf
		23	This is important because many streams have been erroneously removed from the list in the past based on this methodology. For example, several streams in the Clearwater Basin that do not meet water quality standards established in the Clearwater or Nez Perce forest plans are not listed as 303(d) streams.	Disagree. Forest Plans are not state WQS.
		23	The process for delisting streams is far less rigorous than for listing streams. This inherent inconsistency needs to be corrected.	Disagree. The process for listing streams is far less rigorous than for delisting streams. This very fact resulted in EPA listing wilderness waters, wild and scenic rivers, and reference streams in the 1994 action. DEQ has worked extremely hard to monitor the waters on the list and to retain those that are truly impaired while working to de list those that are not.
		23	The removal of several of the streams for temperature is problematic. The Lochsa is affected by roads, including highway 12 and significant logging in much of its headwaters. The removal of Weir Creek, based upon a decision it is natural, is not supported by the facts. The Lolo Motorway (500 road) crosses its headwaters and the highway 12 cutbank is near its mouth. thus, its hydrology has been affected.	“Affected” does not mean impaired. Very little of Weir Creek’s is affected by the Lolo Motorway. The Motorway is a maintained USFS road that runs along the subbasin boundary. Looking down from the motorway, one can observe that Weir Creek is one of the most intact watersheds left on the north side of the Lochsa.

AUs	Waterbody Name	Commentor	Comments	Responses
		23	The Selway River is in a similar situation to Weir Creek. While much of the Selway is in Wilderness, the Magruder road crosses its headwaters and follows along it for a few miles. The spur road to Paradise guard station leaves the Magruder road and, for several miles, follows the Selway. These dirt roads do affect the water quality in the Selway as the recent blowout on the Magruder road shows.	This mass failure/debris torrent originating on Snowwater Creek is extremely different from the Weir Creek above. In 2000, a large wildfire covering more than 76,000 acres burned in the Selway-Bitterroot. Most of the fire was of low to moderate severity, but 160 acres in the Snowwater Creek drainage was severe. On August 3, 2003, a big thunderstorm hit, causing a mass failure originating far above the Magruder road in the Snowwater Creek drainage. It built into a debris torrent 2.5-miles long and 15-feet wide by 10-feet deep. This debris torrent took out lower Snowwater Creek, Magruder Creek, and then wiped out the Magruder road terminating in the Selway River. This natural event was neither caused nor exacerbated by the Magruder road (Personal communication with Mike Jacober, West Fork Ranger District, Bitterroot National Forest). As a natural event, a TDML will not be written nor will the waterbodies in question be listed in Section 5.
		24	Please add those waters that exceed EPA standards for bacteria and nutrients based on the data provided.	The call for data closed some months back. Assessments were completed based on data that was readily available at that time. Further, a TMDL has been completed for this AU's referenced in comment letter 24. These AU's will be reevaluated for the 2004 reporting cycle. The data provided will be saved and incorporated in those assessments. Bacteria has been added to some AUs.
		25	Waters impaired by Habitat or Flow Alteration in section 5 must be included in section 5 (the 303(d) list)	DEQ disagrees that waters impaired by flow or habitat alteration should be in Section 5. 303(d) requires listing and TMDL development for pollutants. Habitat and flow alteration do not fit within the definition of pollution as used in the CWA.

AUs	Waterbody Name	Commentor	Comments	Responses
		25	As a matter of law then, waters listed in section 4C as impaired by “pollution” must be moved to section 5 (the 303(d) list) if any applicable water quality standard (including a use, a criterion, and/or the antidegradation policy) is not, or is not expected to be, met. This would include waters listed in the draft report as impaired by flow or habitat alteration if any standard is affected. So, if the aquatic life use is impaired due to habitat alterations, that water must be listed in section 5 (the 303(d) list) under the statute.	Most waters in Section 4c do indeed appear in Section 5. Careful examination of the list will show that all AUs except one have multiple pollutants and, therefore, appear in Section 5. Water listed for pollution now and in the future will remain in Section 4c.
		25	Even if the above was not established in law, the regulations do not separate “pollutants” from “pollution” for listing purposes.	The sole purpose for listing waterbodies in Section 5 is for the development of a TMDL. TMDLs are only developed for pollutants.
		25	The draft report admits it is woefully unable to address certain kinds of waters, specifically intermittent waters, wetlands, and, to a lesser extent, springs and lake outlets (see draft report, pages 15 and 16). While the existing protocols of WBAGII may not be completely appropriate for these situations, it does not follow that the waters and any data related to them can be ignored. This is not a minor issue in Idaho, where the U.S. Geological Survey identifies 33,000 miles of our streams as intermittent. The draft report states that most of these waters are in section 3 (un-assessed waters). Please explain whether there is any data at all on these waters and what that data suggests about water quality standards support. If the data suggests impairment, the waters should be placed in section 5.	No accurate or useful estimate of intermittent streams exists for Idaho. DEQ uses the 33,000 mile figure as a very loose estimate based on the USGS NHD product. The state’s water quality standards IDAPA 158.01.02 070 (APPLICATION OF STANDARDS) state that numeric water quality standards (really criteria) only apply to intermittent waters during periods of optimum flow. The standards in this section go on to state that optimum flows are 5 cfs for recreation and 1cfs for aquatic life uses. Therefore, it is improper and not legally supported to consider impaired or to 303(d) list an intermittent stream that fails to meet numeric criteria at less than optimum flows. Additionally, DEQ does not place ambient monitoring sites on intermittent streams, wetlands, springs, or lake outlets. If data were available for intermittent streams, corresponding discharge measurements would need to be evaluated to determine if the data were collected during optimum flow conditions.

AUs	Waterbody Name	Commentor	Comments	Responses
		25	<p>The draft report is based primarily on a data analysis process developed in the WBAG II. According to EPA comments dated September 28, 2001, WBAG II “....is not a tool to identify downward trends, threatened waters, change in condition, or areas of antidegradation.” This means the draft report does not identify threatened waters or those with antidegradation problems (a part of the water quality standards package) for 303(d) listing. This omission is inconsistent with the statute, regulations, and U.S. EPA guidance. If WBAG II is not up to the job, the agency must use another method to identify threatened waters and those with antidegradation concerns and add them to section 5 (the 303(d) list).</p>	<p>WBAG2 and associated processes are designed to determine the support status of the most sensitive beneficial uses and is more than sufficient for listing and delisting purposes. Further, WBAG2 specifically states that WQS violations result in Section 5 listing when exceedences are greater than 10% even if the beneficial uses is fully supported. “Changes in condition” and “downward trends” do not in all cases warrant TMDLs. It is to each state’s discretion to utilize the “Threatened” category. At this time, Idaho does not use this category. Idaho addresses anti-degradation requirements through WQS.</p>
		25	<p>According to the draft report, all wilderness waters and a subset of roadless area waters are assumed to be meeting all uses and so are placed into section 1. This assumption is not based on any kind of factual data. While it is true that many of these waters should be Idaho’s finest, many uses are allowed in wilderness and roadless areas that can harm water quality. Cattle and sheep grazing is an obvious example in Idaho. Other more intense activities may come into play, for example the mining activity proposed in the Frank Church Wilderness. The agency must not place these waters into section 1 without evidence of non-degradation to back up the claim. Where no data exists, these waters should be placed in section 3 and scheduled for monitoring.</p>	<p>DEQ concurs with the concept and carefully screened each AU proposed for Section 1 as outlined in DEQ’s Principles and Policies for the Integrated Report. Many AUs in and around the Frank Church River of No Return Wilderness were rejected due to similar concerns. Of all the water in Idaho, these waters stand out, and some that have been monitored have been selected as part of the reference trend network. DEQ does not have the resources to monitor all the waters of the state. The state has full discretion as to where to place AUs; EPA has the responsibility to approve the state’s action. EPA will be approving the placement of AUs in to Section 5 and the failure to place an AU in to Section 5. EPA will not be reviewing whether an AU is placed in Section 1 vs. Section 2 vs. Section 3. Conversely, EPA supported the DEQ approach and rationale.</p>

AUs	Waterbody Name	Commentor	Comments	Responses
		25	Section 1 should also contain those segments determined to be fully supporting their beneficial uses through the assessment process and include the basis for the determination. The <i>Non-303(d) listed Segments found to be Supporting their Beneficial Uses</i> section in the 1998 list provides a template for this addition to section 1.	DEQ used that “template” to carry forward those AUs from the 1998 assessments to Section 2 of the Integrated Report, just like the 1998 303(d) list was used to carry forward all those AUs that were found to be impaired and did not have “good cause” for delisting.
		25	The state is to be commended for holding a public call for data before developing the list, as required by 40 C.F.R. § 130.7(b)(5)(iii), but efforts to reach out to other agencies and the public are hard to judge since the draft report provides no information on data submissions and the process for deciding what data would be incorporated into the report.	<p>The process for accepting or declining outside data was clearly defined in WBAG2. DEQ took public comment on the outside data policy and responses can be found here: http://www.deq.state.id.us/water/surface_water/wbag/WBAG2001_Response_Sec2-Sec3.pdf</p> <p>These criteria are reprinted verbatim in the Principles and Policies document. DEQ conducted a 45-day call for data from March 15 to April 30, 2002. During this time all six DEQ Regional Offices sent letters to agencies and institutions likely to have water quality data pertaining to WQS and/or beneficial use support status. Letters went to Idaho Department of Fish and Game, Bureau of Land Management, and the United States Forest Service. Additionally, DEQ provided Internet-based tools that allowed users to provide electronic data 24/7 during the 45-day call for data. Much of the outside data that was Tier 1 was temperature data that resulted in adding AUs to Section 5.</p>

AUs	Waterbody Name	Commentor	Comments	Responses
		25	However, the public is not aware of what data was submitted for listing consideration, what data was used, and what data was excluded (and why). This makes it impossible for us to comment on the listing decisions in an informed manner. Please share a breakdown of data submitted for consideration and the rationale for using or discarding the data. This is not an unreasonable request as the state is required to submit this information to U.S. EPA along with the 303(d) list.	DEQ provides the precise criteria by which decisions are made as to which tier outside data is categorized. Additionally, DEQ outlines the appropriate use for each data tier. These are not subjective decisions. The data submitted are hard to display as some data are on paper, some are electronic, and some data is even by reference. In many cases, the data are attached in the EPA database to the actual assessment.
		25	“Each AU should be placed in only one of the five unique assessment categories.” 2002 Integrated Water Quality Monitoring and Assessment Report Guidance (November 19, 2001). In the draft report, the agency lists waters in multiple categories, creating confusion. We request that the agency adhere to guidance by placing each AU in just one section, and retaining “listed” waters in section 5.	Impaired waters are always treated on a pollutant-by-pollutant basis, and TMDLs are always written for a segment-pollutant combination (now an AU-pollutant combination). In other words, if an AU is listed for Nutrients and Sediment, two TMDLs are required. To keep an accurate accounting of AU-pollutant combinations, DEQ wishes to treat them individually. The only time AUs are listed in multiple categories is when they are impaired. This occurs when a TMDL is completed for some, but not all, pollutants or when pollutants and pollution impair a waterbody. This approach makes the process of reporting TMDL completed and tracking workloads much simpler.

AUs	Waterbody Name	Commentor	Comments	Responses
		25	<p>The list does not tie to impaired uses, making it hard for the public to understand what the problem means. At minimum, the agency should list the use(s) impaired for section 5 (303(d) list) waters. This is important for public understanding and, in some cases, public health. Listing the supported/un-assessed uses in other categories would be helpful as well.</p>	<p>The Integrated Report is the first time DEQ did, in fact, tie to the impaired beneficial use. No previous 303(d) list has ever tied the impairment to the beneficial use. DEQ's Web-based comment tool shows the much more than what is impaired. It displays designated uses, the existing uses, presumed uses, and if impaired, the impaired beneficial uses. If you did not have access to the Web, then generally, by looking at the listed pollutant, the impaired use can be determined. Bacteria or pathogens impair contact recreation. If the pollutant is temperature it will impair either the aquatic life or salmonid spawning beneficial use. Otherwise, when the pollutant is unknown, you are safe in assuming the cold water aquatic life use is impaired.</p>
		25	<p>While our 305(b) concerns are not as timely as our other comments here, we are obliged to point out to the agency that the draft report would not satisfy 305(b) report requirements. It is arguable if the draft report fulfills any of the requirements of 305(b), but it most certainly does not begin to address parts C (requiring an analysis of the extent to which the elimination of discharges and use support has been achieved and recommendations for how to move to full achievement), D (requiring estimates of the environmental impact, economic and social costs, and economic and social benefits of achieving full compliance as well as an estimated data of achievement), and E (requiring a description of the extent and nature of nonpoint sources of pollution with recommendations for programs to solve those problems and the costs of implementing such programs) of that section of the statute. The agency must address these shortfalls if the draft report is to meet 305(b) obligations.</p>	<p>DEQ is complying with EPA's 2002 Integrated Report Guidance.</p>

AUs	Waterbody Name	Commentor	Comments	Responses
		25	Information must also be provided about priorities for developing TMDLs for newly listed water bodies. Simply saying all newly listed waters are slated for after 2008 does not fulfill the prioritization requirements. The statute states: “The State shall establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters.” 33 U.S.C. § 1313(d)(1)(A).	DEQ is working under a settlement Agreement. This Agreement sets a schedule for the development of TMDLs based on Hydrologic Unit, segment, and pollutant through 2007. When DEQ developed and prioritized the schedule, they considered severity of pollution and the uses to be made of such waters. For purposes of TMDL priorities in Section 5 of the Integrated Report, those TMDLs due in 2003 and 2004 are high, 2005-2006 medium, and 2007 and beyond low. DEQ resources are allocated in accordance with this settlement schedule. AUs added to the 2002/2003 Report will be scheduled for TMDL development starting in 2008. This does not mean all the AUs added during this cycle would be done in 2008, merely, they will be scheduled for 2008 and beyond. However, the settlement Agreement contains a mechanism for DEQ to complete TMDLs sooner for newly listed waters. In determining whether to assign a higher priority to newly listed waters, DEQ may consider whether resources are available and the local Watershed Advisory Group and Basin Advisory Group for that TMDL are in Agreement. Modifications to the schedule will be done on a case by case basis.
		26	The Draft Report fails to disclose the basis for the 303 and changes from 1998 From our perspective one of the major shortcomings of the Draft Report is the lack of information regarding the basis for listings and delistings. Neither the draft report nor the additional information provided after the comment period (<i>AUs removed from 1998 303(d) list, 2002 adds</i>) give any indication of why streams were added or removed.	The basis for all listings and delisting can be found here in the Principles and Policies document. It was an extremely difficult task to create a crosswalk from the 1998 methodology to the 2002 Integrated Report. Neither EPA’s Integrated Report Guidance nor the CFRs supporting Section 303(d) of the Clean Water Act require such an accounting. All AUs removed from the 1998 303(d) list were removed for “good cause” analysis and conducted pursuant to WBAGII.

AUs	Waterbody Name	Commentor	Comments	Responses
		26	While they do indicate the support status of beneficial uses, they do not give the results of the WBAG II assessments that, according to the reports, were accomplished. More information regarding the basis for DEQ's conclusions is essential for assessing the scientific integrity of the beneficial use support status and pollutant determinations. Including the scores for the various WBAG indices in the listings and delistings and indicating what other data played a role would be a good start.	WBAG score are now available via DEQ Web site. DEQ has plans to print and or publish these materials for the 2002 Integrated Report or for 2004. The volume and organization of this information dictates it be Web served.
		26	According to the draft report and agency personnel an assessment database (ADB) was created to display all the assessment data. Apparently there were problems with the first version due to the sheer volume of data. A second version (ADB II) is apparently in the process of being created. Will ADB II be available for public review when it is finished?	This understanding is not accurate. ADB2 has been developed for the 2004 Integrated Report. ADB2 will be available through an interactive Web-based mapping tool to display the support status an underlying assessment of every AU. In most cases SMI, SFI, and SHI score will be shown.
		26	We would be very interested in seeing the WBAG II results for streams such as Lightning Creek and its tributaries which were delisted on the basis of WBAG I but then apparently reassessed with WBAG II. The list indicates that all 9 AUs that now comprise Lightning Creek are impaired by temperature but no other pollutants. As we've pointed out in numerous comments on previous 303(d) lists and the WBAG protocols, the Forest Service has acknowledged that Lightning Creek and many other water bodies in the Panhandle Basin are severely impaired (functioning at risk or not functioning) in most cases due to sediment and channel instability. The fact that the WBAG II assessment led to the conclusion that sediment and channel instability are not impairing the beneficial uses in these watersheds is likely indicative of major	Those AUs not added by EPA for Temperature in 1998 were assessed for temperature violations based on outside temperature data provided to DEQ during the 2002 Call for Data, yet no sediment data was provided. WBAG2 assessments are not intended to determine the pollutant or source unless the data indicate a specific WQS violation. In this case there were temperature violations. Therefore, the AU is listed for temperature but not sediment. One cannot draw the conclusion that temperature is the only pollutant until the SBA, but it is the only pollutant DEQ had data to list Lightning Creek at present. See item 16 (Pollutants and Causes) in Principles and Policies Document.

AUs	Waterbody Name	Commentor	Comments	Responses
			deficiencies and that there is still a bias toward full support in the new WBAG.	
		26	Although we have been told repeatedly and the draft report clearly states that the agency is not accepting comments on the listing methodology, it is impossible to separate the list (and the draft report) from the process used to create it. The assessment protocol must, by necessity, be part of the discussion since it is the basis for listing or not listing. Therefore we hereby incorporate by reference our comments on WBAG II, dated May 31, 2002.	Responses to your previous comments can be found in the Response to WBAG2 comments document (http://www.deq.state.id.us/water/surface_water/wbag/WBAG2001_Response_Sec2-Sec3.pdf). Those responses are hereby incorporated in answer to your request.
		26	Looking back at the 1998 list, we find the section titled <i>Non-303(d) listed Segments found to be Supporting their Beneficial Uses</i> , which are stream segments for which BURP data was collected between 1993 and 1996 and assessed using WBAG I. The information presented indicates that the segments were determined to fully support their beneficial uses based solely on MBI scores. We would like to request a re-assessment of these stream segments using WBAG II. This would be a good test of WBAG II's ability to discern impairment since some of them (for example, Smith, Callahan (17010104)) are known to be impaired by sediment and/or channel instability. We are concerned that the Non 303(d) listed Segments listed in 1998 have fallen through the cracks in regard to pollutants other than temperature.	This is not a correct understanding of the WBAG1 assessment process. MBI scores were not the sole determining factor of an assessment. Those concerns were answered in the 1998 303(d) package. 1998 assessment calls will not be revisited based on this request. Some 1998 assessment calls are subject to the Settlement Agreement. DEQ is complying with the Settlement Agreement. From the Settlement Agreement, Attachment 2 waters were reevaluated and were present in the draft report. Attachment 3 waters are those that were to be remonitored and then reassessed and are due in the 2004 Integrated Report. Otherwise, all future monitoring and assessments are based on Idaho's Ambient Monitoring Plan (AMP).
		26	Lake Pend Oreille was listed on the 1998 list for total dissolved gas (TDG) and "Unknown." The TDG listing was likely based on data collected by Avista during the Clark Fork dam re-licensing process. The data collected included saturated gas levels that exceeded the Idaho water quality numeric	Concur.

AUs	Waterbody Name	Commentor	Comments	Responses
			standard for TDG below the Cabinet Gorge dam in the Clark Fork River and Lake Pend Oreille. Monitoring of TDG levels continues and TDG levels still exceed the numeric standard (DEQ personnel, pers. conv.). Lake Pend Oreille should be included in Section 5 - <i>Impaired Waters: Lakes</i> for TDG.	
		26	There is no information presented in the draft report regarding the Unknown pollutants for which the Lake was listed in 1998. The Tri State Implementation Council has been working on a TMDL for the Lake to address near-shore excessive nutrient levels. Shouldn't the Lake be listed for nutrients?	Concur.
		26	We note that the Clark Fork River is still listed in section 5 for TDG in the AU from Mosquito Creek to the Lake, but not in the AU from the dam to Mosquito Creek. This can't be correct.	This is an NHD related artifact that has been rectified.
		26	Looking back at the 1998 list we find that some segments that were listed for sediment may still be on the list, but no longer are listed for sediment. Examples: 17010213: Wellington Creek, East Fork Cr and 17010214: Granite Creek are only listed for Temperature in section 5.	Concur.
		26	On the other hand, some are not in section 5 but are all on the <i>AUs removed from 1998 303(d)</i> list recently provided by DEQ. Examples: 17010214: HooDoo Creek was listed for SED and TEMP; Cocolalla Creek was listed for SED and TEMP; Pack River (Lower-Hwy 95 to Lake PO) was listed for BAC, DO, HALT, NUT, PST, SED and Caribou Creek was listed for SED.	HooDoo Creek is in Section 5, listed for sediment and temperature, and is split into to AUs: ID17010214PN003_02 and ID17010214PN003_02a. Cocolalla Creek is in Section 5, listed for sediment and temperature, and is split into to 3 AUs: ID17010214PN014_02, ID17010214PN014_03, and ID17010214PN014_04. Pack River was not listed in 1998 by DEQ but later listed by EPA. Pack River is now split between 3 waterbody Ids (WBID): 031, 039, and 041. Among this unfortunate WBID split, the AUs are appropriately segmented as follows:

AUs	Waterbody Name	Commentor	Comments	Responses
				<p>ID17010214PN031_02 (zero miles) (possibly a lake issue)</p> <p>ID17010214PN031_04</p> <p>ID17010214PN039_02</p> <p>ID17010214PN039_03</p> <p>ID17010214PN039_04</p> <p>ID17010214PN041_02</p> <p>ID17010214PN041_03</p> <p>Both the Pend Oreille and Clark Fork TMDLs address these Pack River AUs and propose removing the most of the listed pollutants with TMDLs now only being developed for temperature and sediment.</p> <p>ID17010214PN039_04 incorrectly showed approved Temp TMDL: 04/02/2001 and this has been removed.</p> <p>Caribou Creek ID17010214PN045_02 has an EPA approved sediment TMDL.</p>
		26	please note that HUC 17010213 waters do not appear to be included in section 4A	Corrected.
		26	In any case, waters with approved TMDLs are still impaired and should remain on the 303(d) list until the TMDL has been implemented and monitoring data indicates that they are no longer impaired. We ask that they remain on the list in section 5, with a notation that a TMDL has been approved and indicating the pollutant addressed in the TMDL.	This is one of the positive aspects of tracking by the AU-pollutant combination rather than just the AU. An AU will continue to be listed in Section 5 until all the pollutants have been addressed. Once all the pollutants have been addressed, the AU will be found in Section 4a. The AU will remain in Section 4a (not Section 5) until “the TMDL has been implemented and monitoring data indicates that they are no longer impaired.” In the ADB, beneficial uses remain listed as impaired. This is part of the reason that DEQ does not opt to implement the Integrated Report Guidance point for point.

AUs	Waterbody Name	Commentor	Comments	Responses
		26	Also, section 4A indicates that many TMDLs for thermal modification have been completed and approved for many streams, which is not the case. According to DEQ personnel, this is apparently the result of a computer glitch that DEQ will fix.	Correct see above.
		26	According to section 4A the Lower Pack River has an approved sediment TMDL. It should still be listed for the other pollutants BAC, DO, HALT, NUT, PST, as well as SED in section 5.	Both the Pend Oreille and Clark Fork TMDLs address the Pack River and propose removing the most of the listed pollutants with TMDLs now only being developed for temperature and sediment.
		26	We're confident that this is just the "tip of the iceberg" in terms of segments that are wrongly categorized or missing from the 303(d) list, not just in the Panhandle, but state-wide. We assume that mistakes and inconsistencies will have to be corrected before the draft report can be approved by EPA.	DEQ pointed out all of these shortcomings to the commentor and EPA during the public comment process. These issues have been resolved, and, if future issues surface, all parties should now have confidence that any error is truly an oversight and will be addressed properly.
		26	We find that most, if not all, of the newly listed waters are listed for Temp and/or Unknown ("Ukn") pollutants. We assume that the ones listed for Ukn were listed as a result of the BURP/WBAGII protocol. We are dismayed and disappointed that the pollutants were not determined for these streams, for a variety of reasons.	Determining the cause of beneficial use impairment is done in the SBA process. It is useless to guess or infer pollutants. Identifying incorrect pollutants is a monumental waste of state resources. Adding a laundry list of pollutants does not "protect" a waterbody from degradation any more than listing a single pollutant as unknown. DEQ would prefer to involve the WAG and BAG in pollutant and source identification. It is not possible to achieve that prior to a listing at this time; therefore, DEQ takes a conservative route striving to use the best data and science available.

AUs	Waterbody Name	Commentor	Comments	Responses
		26	Our understanding is that new streams on the list will be scheduled for TMDLs after the current schedule is completed in 2008 as required by the consent decree. The Pend Oreille sub-basin was a high priority for TMDL development on the schedule for the 1998 list. According to DEQ personnel, the newly listed streams in the Pend Oreille are not high priority. There is no indication what the procedure and timeline will be to assess newly listed waters that are located in sub-basins that have already been assessed. How long will they wait?	Possibly as long as 2008. Not every subbasin can be a high priority all the time. Pend Oreille subbasin was a high priority for TMDL development on the schedule for the 1998 list. In that effort, none of the involved parties brought these impaired streams or additional pollutants to the attention of DEQ. Now that the Pend Oreille TMDL has been approved and is being implemented, DEQ must focus on other subbasin that also suffer impairments and were not addressed as resources were focused on the Pend Oreille. Possibly if the pollutants in the Pend Oreille had been listed as unknown and the SBA-TMDL process was not hamstrung by laundry lists of potential pollutants, the TMDL would have addressed the new streams you are now concerned about.
		26	In the meanwhile these streams, even though officially impaired, will have no protection under the Clean Water Act or state water quality standards (WQS). Because no pollutants have been identified, the regulations that disallow further pollution in 303(d) listed waters are rendered moot.	DEQ disagrees. All activities should be screened and some activities such as 401/404 applications are flagged for a higher level of scrutiny before approval or disapproval.
		26	Why is it that DEQ is no longer able to discern the cause of impairment (pollutant(s)) through the assessment process? Now that the WBAG has purportedly been improved, DEQ claims that it is no longer feasible to determine that a stream is choked with sediment or its channel unstable.	This is untrue. The WBAG process was never designed or intended to identify a cause or a pollutant. WBAG is one of the most sensitive and encompassing approaches possible because unlike strict chemical monitoring done in other states, Idaho makes a direct assessment of the aquatic life uses. This is in stark contrast to simply dipping water and not listing streams because a particular constituent did not happen to exceed a given WQS. The small amount of money allocated to the BURP-WBAG2 monitoring and assessment process goes many times farther and is far better at detecting impairment than any chemical monitoring could be.

AUs	Waterbody Name	Commentor	Comments	Responses
		26	Is DEQ reviewing all existing or readily available data in an effort to identify pollutants?	Yes. See WBAG2.
		26	Sand Creek is a prime example of a stream for which there is ample evidence that at least one pollutant of concern has been identified: sediment. Section 5 lists Sand Creek for temperature in the AU below Schweitzer Creek and temperature and Unknown in the AU above Schweitzer Creek.	See next comment. Schweitzer Creek is currently listed for sediment.
		26	The DEQ enforcement file for (lower) Sand Creek indicates there were violations of the suspended sediment standard and that beneficial uses (cold water biota, salmonid spawning, drinking water) were impaired by sediment in Schweitzer Creek and Sand Creek, as a result of a massive road failure on the Schweitzer road in 1991. Lower Sand Creek was later heavily impacted by erosion and stream channel disturbance during the reconstruction of Highway 95 north of Sandpoint. This was documented by both DEQ and the Army Corps of Engineers. According to DEQ personnel, complaints about erosion in Sand Creek and Schweitzer Creek stemming from ongoing construction at Schweitzer Resort have continued over the years. Based on this information, ID17010214PN048_03 Sand Creek from Schweitzer Creek to mouth should be listed for sediment. Also, Schweitzer Creek, ID17010214PN052_02 should be put back on the list for sediment.	DEQ's intention is to monitor Sand Creek further and determine what action to take as the Sediment TMDL is developed for Schweitzer Creek (ID17010214PN052_02) upstream. As Sand Creek is the receiving waterbody, sediment loads from Schweitzer Creek must not impair the beneficial uses of Sand Creek. In order to determine the load allocation and load reductions needed on Schweitzer Creek, the sediment carrying capacity of Sand Creek will be determined. If, in these activities, it is determined that Sand Creek is sediment impaired, the TMDL will be developed concurrently with the Schweitzer Creek work.
ID17050101SW003_04	Browns Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 5 as in 1998 list.
ID17050101SW006_04	Sailor Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 5 as in 1998 list.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050101SW008_03	Deadman Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 5 as in 1998 list.
ID17050101SW012_03a	Little Canyon Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 5 as in 1998 list.
ID17050101SW014_03	Cold Springs Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 5 as in 1998 list.
ID17050101SW016_03	Bennett Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 5 as in 1998 list.
ID17050102SW031_02	Three Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 4a.
ID17050103SW025_03	Corder Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 5 as in 1998 list.
ID17050103SW026_02	Rabbit Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 5 as in 1998 list.
ID17050104SW028_04	Pole Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 4a.
ID17050104SW032_02	Castle Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 4a.
ID17050108SW001_05	Jordan Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 5 as in 1998 list.
ID17050108SW004_04	Jordan Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 5 as in 1998 list.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050108SW014_03	Louisa Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 5 as in 1998 list.
ID17050108SW021_04	Cow Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Tier I data = FS. Section 2.
ID17050114SW009_02	Tenmile Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	ID17050114SW009_02 will be listed in Section 2.
ID17050114SW009_03	Tenmile Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	ID17050114SW009_03 will be removed from Section 5 for nutrients. DO and sediment will remain on Section 5 because the Modified beneficial use has not been approved by EPA. These pollutants are linked to the Modified beneficial use. Bacteria will be added to Section 5.
ID17050122SW015_03	Bissel Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 4a.
ID17050123SW015_02	Mud Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 4a.
ID17050124SW002_02	Cove Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 5 as in 1998 list.
ID17050124SW005_04	South Crane Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 5 as in 1998 list.
ID17050124SW006_02	North Crane Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 5 as in 1998 list.
ID17050124SW006_03	North Crane Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 5 as in 1998 list.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17050124SW006_04	North Crane Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Section 5 as in 1998 list.
ID17060205SL014_02	Sheep Trail Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Tier I data = FS. Section 2.
ID17060205SL015_02	Cub Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Tier I data = FS. Section 2.
ID17060205SL016_03	Cache Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Tier I data = FS. Section 2.
ID17060208SL023_05	East Fork South Fork Salmon	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Tier I data = FS. Section 2.
ID17060208SL025_04	Johnson Creek	27	Was on 1998 303(d) List. Must be moved to Section 5 unless Tier 1 data show full support of Beneficial Uses and no Water Quality Criteria violations.	Tier I data = FS. Section 2.
ID17010301PN005_02	Prichard Creek – source to Butte Creek	27	Should be in Section 5 as impaired by thermal modification and metals. Thermal modification was not linked to uses that were being impaired. This has been corrected.	This AU appears in Section 5 for Thermal Modification.
ID17010301PN005_03	Prichard Creek – source to Butte Creek	27	Should be in Section 5 as impaired by metals	This AU appears in Section 5 for Thermal Modification.
ID17010301PN007_02	Eagle Creek – source to mouth	27	Should be in Section 5 as impaired by metals	This AU appears in Section 5 for Thermal Modification.
ID17010301PN007_03	Eagle Creek – source to mouth	27	Should be in Section 5 as impaired by metals	This AU appears in Section 5 for Thermal Modification.
ID17010301PN008_02	West Fork Eagle Creek – source to mouth	27	Should be in Section 5 as impaired by thermal modification. Thermal modification was not linked to uses that were being impaired. This has been corrected.	This AU appears in Section 5 for Thermal Modification.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17010301PN009_03	Lost Creek – source to mouth	27	Should be in Section 5 as impaired by thermal modification. Thermal modification was not linked to uses that were being impaired. This has been corrected.	This AU appears in Section 5 for Thermal Modification.
ID17010301PN020_03	Big Elk Creek – source to mouth	27	Should be in Section 5 as impaired by thermal modification. Thermal modification was not linked to uses that were being impaired. This has been corrected.	This AU appears in Section 5 for Thermal Modification.
ID17010301PN028_03	Steamboat Creek - source to mouth	27	Should be in Section 5 as impaired by thermal modification. Thermal modification was not linked to uses that were being impaired. This has been corrected.	This AU appears in Section 5 for Thermal Modification.
ID17010301PN030_02	Little North Fork Coeur d’Alene River - source to mouth	27	Should be in Section 5 as impaired by thermal modification. Thermal modification was not linked to uses that were being impaired. This has been corrected.	This AU appears in Section 5 for Thermal Modification.
ID17010301PN036_02	Burnt Cabin Creek - source to mouth	27	Should be in Section 5 as impaired by thermal modification	This AU appears in Section 5 for Thermal Modification.
ID17010301PN039_03	Copper Creek - source to mouth	27	Should be in Section 5 as impaired by thermal modification	This AU appears in Section 5 for Thermal Modification.
ID17010302PN001_05	South Fork Coeur d’Alene River- Canyon Creek to mouth	27	Should be in Section 5 as impaired by thermal modification.	This AU appears in Section 5 for Thermal Modification.
ID17010302PN014_02	Canyon Creek – from and including Gorge Gulch to mouth	27	Should be in Section 5 as impaired by thermal modification. Thermal modification was not linked to uses that were being impaired. This has been corrected.	This AU appears in Section 5 for Thermal Modification.
ID17010302PN016_02	Ninemile Creek – from and including East Fork Ninemile Creek to mouth	27	Should be in Section 5 as impaired by thermal modification. Thermal modification was not linked to uses that were being impaired. This has been corrected.	This AU appears in Section 5 for Thermal Modification.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17010302PN011_03	South Fork Coeur d'Alene River – from and including Daisy Gulch to Canyon Creek	27	Should be in Section 5 as impaired by metals	This AU appears in Section 5 for Thermal Modification.
ID17010303PN002_02	Cougar Creek – source to mouth	27	Should be in Section 5 as impaired by thermal modification. Thermal modification was not linked to uses that were being impaired. This has been corrected.	This AU appears in Section 5 for Thermal Modification.
ID17010303PN004_02	Mica Creek - source to mouth	27	Should be in Section 5 as impaired by thermal modification. Thermal modification was not linked to uses that were being impaired. This has been corrected.	This AU appears in Section 5 for Thermal Modification.
ID17010303PN007_06	Coeur d'Alene River – Latour Creek to mouth	27	Should be in Section 5 as impaired by metals. Thermal modification was not linked to uses that were being impaired. This has been corrected.	This AU appears in Section 5 for Thermal Modification.
ID17010303PN015_02	Latour Creek - source to mouth	27	Should be in Section 5 as impaired by thermal modification. Thermal modification was not linked to uses that were being impaired. This has been corrected.	This AU appears in Section 5 for Thermal Modification.
ID17010303PN016_06	Coeur d'Alene River – South Fork Coeur d'Alene River to Latour Creek	27	Should be in Section 5 as impaired by thermal modification. Thermal modification was not linked to uses that were being impaired. This has been corrected.	This AU appears in Section 5 for Thermal Modification.
ID17010303PN029_03	Wolf Lodge Creek - source to mouth	27	Should be in Section 5 as impaired by thermal modification. Thermal modification was not linked to uses that were being impaired. This has been corrected.	This AU appears in Section 5 for Thermal Modification.
ID17010303PN031_02	Marie Creek - source to mouth	27	Should be in Section 5 as impaired by thermal modification. Thermal modification was not linked to uses that were being impaired. This has been corrected.	This AU appears in Section 5 for Thermal Modification.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17010104PN004_02	Blue Joe Creek	27	Should also be listed in Section 5 for Temperature; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010104PN006_03	Cow Creek	27	Should also be listed in Section 5 for Temperature; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010104PN012_08	Kootenai River	27	Should be in Section 5; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010104PN015_04	Deep Creek	27	Should also be listed in Section 5 for Temperature; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010104PN016_03	Snow Creek	27	Should be in Section 5; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010104PN017_02	Caribou Creek	27	Should also be listed in Section 5 for Temperature; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010104PN018_04	Deep Creek	27	Should also be listed in Section 5 for Temperature; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010104PN019_04	Deep Creek	27	Should also be listed in Section 5 for Temperature; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010104PN022_03	Deep Creek	27	Should also be listed in Section 5 for Temperature; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010104PN024_04	Dodge Creek	27	Should be in Section 5; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010104PN027_02	Brown Creek	27	Should be in Section 5; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010104PN027_03	Brown/Twenty mile Creek	27	3 rd order segment is actually Twentymile Creek, 17010104PN028_03; Should be in Section 5; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010104PN029_08	Kootenai River	27	Should be in Section 5; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010104PN031_05	Kootenai/Moyie River	27	5 th order segment is actually Moyie River, ID17010105PN001_05; Moyie River is listed for sediment, Kootenai River should not be listed for sediment.	This AU appears in Section 5 for Thermal Modification.
ID17010104PN031_08	Kootenai River	27	Should be in Section 5; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17010104PN032_03	Boulder Creek	27	Should also be listed in Section 5 for Temperature; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010104PN036_03	Flemming Creek	27	Should be in Section 5; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010104PN040_03	Mission Creek	27	Should be in Section 5; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010214PN018_02a	Falls Creek	27	Stream site, should not be listed in Section 2 for Lakes	Insure that the reports reflect the changes.
ID17010214PN018L	Pend Oreille Lake	27	Should be in Section 5; with TDG listing carried forward from 1998	Insure that the reports reflect the changes.
ID17010214PN034_02	Gold Creek	27	Should also be listed in Section 5 for Temperature; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010214PN039_04	Upper Pack River	27	Should be in Section 5; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010214PN041_02	Upper Pack River	27	Should also be listed in Section 5 for Temperature; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010214PN046_02	Berry Creek	27	Should be in Section 4c; Impaired by flow alteration	Insure that the reports reflect the changes.
ID17010214PN046_03	Berry/Colburn Creek	27	3 rd order segment is actually Colburn Creek, ID17010214PN047_03	Insure that the reports reflect the changes.
ID17010214PN052_02	Schweitzer Creek	27	Should be in Section 5; Has turbidity data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010216PN002_08	Pend Oreille River	27	Should be in Section 5; Has TDG and temperature data with exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010302PN015_02	Canyon Creek	27	Should be in Section 5; Has temperature data and exceedances.	This AU appears in Section 5 for Thermal Modification.
ID17010213PN003_08	Clark Fork River- Dam to Mosquito Ck	27	Cause needs to be changed from total toxics to TDG and linked to uses	This AU appears in Section 5 for Thermal Modification.
ID17010213PN005_08	Clark Fork River- Border to Dam	27	Cause needs to be changed from total toxics to TDG and Thermal Modification needs to be added as a cause and both linked to uses	This AU appears in Section 5 for Thermal Modification.
ID17010213PN001_08	Clark Fork River- Mosquito Ck to Delta	27	Add thermal mod as cause and link to uses	This AU appears in Section 5 for Thermal Modification.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17010213PN014_02	East Fork Ck	27	Add Sediment, Qalt, Halt as causes from 1998 list	This AU appears in Section 5 for Thermal Modification.
ID17010213PN014_03	East Fork Ck	27	Add Sediment, Qalt, Halt as causes from 1998 list	This AU appears in Section 5 for Thermal Modification.
ID17010213PN011_02	Lightning Ck	27	Add unknown as cause and link to uses due to excessive streambank destabilization.	This AU appears in Section 5 for Thermal Modification.
ID17010213PN011_04	Lightning Ck	27	Add unknown as cause and link to uses due to excessive streambank destabilization.	This AU appears in Section 5 for Thermal Modification.
ID17010213PN013_02	Lightning Ck	27	Add unknown as cause and link to uses due to excessive streambank destabilization.	This AU appears in Section 5 for Thermal Modification.
ID17010213PN013_04	Lightning Ck	27	Add unknown as cause and link to uses due to excessive streambank destabilization.	This AU appears in Section 5 for Thermal Modification.
ID17010213PN017_02	Lightning Ck	27	Add unknown as cause and link to uses due to excessive streambank destabilization.	This AU appears in Section 5 for Thermal Modification.
ID17010213PN017_03	Lightning Ck	27	Add unknown as cause and link to uses due to excessive streambank destabilization.	This AU appears in Section 5 for Thermal Modification.
ID17010213PN019_02	Lightning Ck	27	Add unknown as cause and link to uses due to excessive streambank destabilization.	This AU appears in Section 5 for Thermal Modification.
ID17010213PN019_03	Lightning Ck	27	Add unknown as cause and link to uses due to excessive streambank destabilization.	This AU appears in Section 5 for Thermal Modification.
ID17010213PN010_04	Lightning Ck	27	Add unknown as cause and link to uses due to excessive streambank destabilization.	This AU appears in Section 5 for Thermal Modification.
ID17010213PN016_02	Lightning Ck	27	Add unknown as cause and link to uses due to excessive streambank destabilization.	This AU appears in Section 5 for Thermal Modification.
ID17010213PN013_03	Lightning Ck	27	Add unknown as cause and link to uses due to excessive streambank destabilization.	This AU appears in Section 5 for Thermal Modification.
ID17010304PN010_02	Santa Ck	27	Add DO as a cause and link to uses (carry fwd from 98)	This AU appears in Section 5 for Thermal Modification.
ID17010304PN010_03	Santa Ck	27	Add temp as a cause and link to uses.	This AU appears in Section 5 for Thermal Modification.
ID17010304PN011_03	Charlie Ck	27	Add temp as a cause and link to uses.	This AU appears in Section 5 for Thermal Modification.
ID17010304PN012_05	St. Maries River	27	Add temp as a cause and link to uses.	This AU appears in Section 5 for Thermal Modification.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17010304PN013_03	Tyson Ck	27	Add temp as a cause and link to uses.	This AU appears in Section 5 for Thermal Modification.
ID17010304PN014_03	Carpenter Ck	27	Add temp as a cause and link to uses.	This AU appears in Section 5 for Thermal Modification.
ID17010304PN018_03	Middle Fork St. Maries River	27	Add temp as a cause and link to uses.	This AU appears in Section 5 for Thermal Modification.
ID17010304PN018_04	Middle Fork St. Maries River	27	Add sed (from 1998) and temp as a cause and link to uses.	This AU appears in Section 5 for Thermal Modification.
ID17010304PN024_03	Renfro Ck	27	Add temp as a cause and link to uses.	This AU appears in Section 5 for Thermal Modification.
ID17010304PN025_02	Beaver Ck	27	Add temp as a cause and link to uses.	This AU appears in Section 5 for Thermal Modification.
ID17010304PN026_02	Thorn Ck	27	Add temp, sediment and nutrients as causes and link to uses.	This AU appears in Section 5 for Thermal Modification.
ID17010304PN026_03	Thorn Ck	27	Add sediment and nutrients (from 1998 list) as causes and link to uses.	This AU appears in Section 5 for Thermal Modification.
ID17010304PN039_02	Fishhook Ck	27	Add temp as a cause and link to uses.	This AU appears in Section 5 for Thermal Modification.
ID17010304PN039_03	Fishhook Ck	27	Add temp as a cause and link to uses.	This AU appears in Section 5 for Thermal Modification.
ID17010304PN039_04	Fishhook Ck	27	Added method 200 and comment stating listed for temp in 1998.	Done.
ID17010304PN041_02	St. Joe River	27	Added method 200 and checked habitat and biological categories (4)	Done.
ID17010304PN045_02	Bluff Creek	27	Added method 200 and checked habitat and biological categories (4)	Done.
ID17010304PN045_03	Bluff Creek	27	Added comment stating 98 add for temp and changed cold water ALU to not supporting	This AU appears in Section 5 for Thermal Modification.
ID17010304PN046_02	Mosquito Ck	27	Added comment stating 98 add for temp. Also needs temperature added as a cause and link to uses.	This AU appears in Section 5 for Thermal Modification.
ID17010304PN047_02	Fly Ck	27	Added comment stating 98 add for temperature. Changed cold water ALU to not supporting. Needs temperature added as cause and link to uses.	This AU appears in Section 5 for Thermal Modification.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17010304PN048_02	Beaver Ck	27	Added Method 200, added comment stating 98 add for temp	This AU appears in Section 5 for Thermal Modification.
ID17010304PN052_02	Simmons Ck	27	Added comment stating 98 add for temperature, added cold water ALU, not supporting. Needs temperature added as a cause.	This AU appears in Section 5 for Thermal Modification.
ID17010304PN052_03	Simmons Ck	27	Added comment stating 98 add for temperature, added cold water ALU, not supporting. Needs temperature added as a cause.	This AU appears in Section 5 for Thermal Modification.
ID17010304PN053_02	Gold Ck	27	Added method 200	Done.
ID17010304PN060_02	Loop Ck	27	Needs to have sediment and unknown (carried forward from 1998) and temp (98 EPA add) added as causes and linked to uses.	This AU appears in Section 5 for Thermal Modification.
ID17010304PN061_03	N.F. St. Joe River	27	Added method 200	Done.
ID17010304PN062_03	Slate Ck	27	Added method 200 and marked Habitat and Biological categories (4)	Done.
ID17010304PN063_02	Big Ck	27	Added method 200	Done.
ID17010304PN063_03	Big Ck	27	Added method 200	Done.
ID17010104PN0023_0L change to ID17010104PN0023L_0 L	McArthur Lake	27		Change ID number of AU to be consistent with Lake convention.
ID17010214PN004_02	Kelso Lake and outlet	27	These are 1st & 2nd order tributaries to Kelso Lake.	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010214PN004L_0L (does not exist)	Kelso Lake	27	This would be a new segment.	Create a new Lake segment, 54 acres, and place in Lakes Section 3.
ID17010214PN005_02	Granite Lake	27	These are 1st & 2nd order tributaries to Granite Lake	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010214PN006_02? ?	Beaver Lake	27	9.78 units. I think these are 1st & 2nd order tributaries to Beaver Lake.	If tributaries, change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010214PN006L_0L (does not exist)	Beaver Lake	27	This would be a new segment.	Create a new Lake segment, 15 acres, and place in Lakes Section 3.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17010214PN008_02 & ID17010214PN008_04	Blanchard Lake	27	These are 1st , 2nd & 4th order tributaries to Blanchard Lake.	If tributaries, change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010214PN008L_0L (does not exist)	Blanchard Lake	27	This would be a new segment.	Create a new Lake segment, 136 acres, and place in Lakes Section 3.
ID17010214PN009_02	Spirit Lake	27	These are 1st & 2nd order tributaries to Spirit Lake.	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010214PN009L_0L	Spirit Lake	27	Changed to Fully Supporting. Should be in Lakes Section 2.	
ID17010214PN0011_02 & ID17010214PN0011_03	Jewel Lake	27	These are 1st, 2nd & 3rd order tributaries to Jewel Lake.	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010214PN0011L_0L (does not exist)	Jewel Lake	27	This would be a new segment.	Create a new Lake segment, 34 acres, and place in Lakes Section 3.
ID17010214PN0012_02	Cocolalla Creek – Cocolalla Lake to mouth	27	Changed Causes to only Siltation	
ID17010214PN0012_04	Cocolalla Creek – Cocolalla Lake to mouth	27		Need to add Siltation as a cause.
ID17010214PN0013_02	Cocolalla Lake	27	These are 1st & 2nd order tributaries to Cocolalla Lake.	Change Type from Lakes to Rivers, and Units to miles. Delete Causes and change Support to Not Assessed. Move to Rivers Section 3.
ID17010214PN0014_03	Cocolalla Creek – source to mouth	27		Need to add Siltation as a cause.
ID17010214PN0015_03	Fish Creek	27		Need to add Siltation and Pathogens as causes.
ID17010214PN0018_02 a ID17010214PN0018_02 a	Unnamed Falls Creek Boyer Slough	27	1st & 2nd order tributaries to Pend Oreille. Rivers S. 3 1st & 2nd order tributaries to Pend Oreille. Rivers S. 2 1st & 2nd order tributaries to Pend Oreille. Rivers S. 3	Change Type from Lakes to Rivers, and Units to miles. Should be in Rivers Sections to left.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17010214PN0019_02 ??	Gamble Lake	27	101.31 units. I think these are 1st & 2nd order tributaries to Gamble Lake.	If tributaries, change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010214PN0019L_0 L (does not exist)	Gamble Lake	27	This would be a new segment.	Create a new Lake segment, 130 acres, and place in Lakes Section 3.
ID17010214PN0020_02 ??	Mirror Lake	27	84.02 units. I think these are 1st & 2nd order tributaries to Mirror Lake.	If tributaries, change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010214PN0020L_0 L (does not exist)	Mirror Lake	27	This would be a new segment.	Create a new Lake segment, 90 acres, and place in Lakes Section 3.
ID17010214PN0040_02 ??	Walsh Lake	27	37.07 units. I think these are 1st & 2nd order tributaries to Walsh Lake.	If tributaries, change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010214PN0040L_0 L (does not exist)	Walsh Lake	27	This would be a new segment.	Create a new Lake segment, 33 acres, and place in Lakes Section 3.
ID17010215PN0001_05	Lower Priest River – Upper West Branch Priest River to mouth	27	Added approved TMDL: should go to Rivers Section 4.	Unknown and Thermal Modification still appear as pollutants.
ID17010215PN0002_03	Big Creek	27	Full Support	Absent in draft Rivers Section 2. Should be there.
ID17010215PN0003_02 ID17010215PN0003_03 ID17010215PN0003_04	Middle Fork East River – source to mouth	27	Added approved TMDLs: should go to Rivers Section 4.	Correct.
ID17010215PN0004_03	North Fork East River – source to mouth	27	Added approved TMDLs: should go to Rivers Section 4.	Correct.
ID17010215PN0006_02	Priest Lake	27	These are 1st & 2nd order tributaries to Priest Lake. Changed to Full Support (Bottle Creek) with justification.	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 2.
ID17010215PN0007_02	Chase Lake	27	These are 1st & 2nd order tributaries to Chase Lake.	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010215PN0009_02	Hunt Creek	27	Full Support	Absent in draft Rivers Section 2. Should be there.
ID17010215PN0014_04	Priest Lake Thorofare	27	This is a 4 th order river to Priest Lake.	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17010215PN0016_02	Upper Priest Lake	27	These are 1st & 2nd order tributaries to Upper Priest Lake.	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010215PN0018_03	Upper Priest River	27	Full Support	Absent in draft Rivers Section 2. Should be there.
ID17010215PN0019_04	Hughes Fork	27	Full Support	Absent in draft Rivers Section 2. Should be there.
ID17010215PN0021_02	Tango Creek	27	Full Support	Absent in draft Rivers Section 2. Should be there.
ID17010215PN0026_02	Binarch Creek	27	Added approved TMDLs: should go to Rivers Section 4.	
ID17010303PN0001_02 ID17010303PN0001_02 T	Coeur d'Alene Lake	27	These are 1st & 2nd order tributaries to Coeur d'Alene Lake.	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Sections.
ID17010303PN0008_02	Anderson Lake	27	These are 1st & 2nd order tributaries to Anderson Lake.	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010303PN0009_02	Black Lake	27	These are 1st & 2nd order tributaries to Black Lake.	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010303PN0009_03	Black Lake	27	Units show zero (0)	Delete segment from data base.
ID17010303PN0009_02 T	Lamb Creek within Black Lake	27	Lamb Creek 2nd order is a tributary to Black Lake.	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010303PN0009_03 T	Lamb Creek within Black Lake	27	Lamb Creek 3rd order tributary to Black Lake.	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010303PN0009L_0 L	Black Lake	27	This is OK; this is Black Lake.	OK.
ID17010303PN0010_02 ID17010303PN0010_03 ID17010303PN0010_02 T	Medicine Lake	27	These are 1st, 2nd, and 3rd order tributaries to Medicine Lake.	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010303PN0010_0L create: ID17010303PN0010L_0 L	Medicine Lake	27	Medicine Lake itself (988.42 acres) is embedded within the above group of 17010303PN0010_ tributaries.	Pull out of tributary section and create new segment with an ID to the far left.
ID17010303PN0014_02	Bull Run Lake	27	79.07 units. Are these are 1st & 2nd order tributaries to Bull Run Lake?	If tributaries, change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.

AUs	Waterbody Name	Commentor	Comments	Responses
ID17010303PN0014L_0 L (does not exist)	Bull Run Lake	27	Create or renumber ID.	Create ID number of AU to be consistent with Lake convention.
ID17010303PN0021_02	Rose Lake	27	These are 1st & 2nd order tributaries to Rose Lake.	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010303PN0022_02 ID17010303PN0022_03	Killarney Lake	27	These are 1st, 2nd, and 3rd order tributaries to Killarney Lake.	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010303PN0023_02	Swan Lake	27	These are 1st & 2nd order tributaries to Swan Lake.	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010303PN0024_02	Blue Lake	27	These are 1st & 2nd order tributaries to Blue Lake.	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010303PN0032_03	Fernan Creek – Fernan Lake to mouth	27	Changed support to Full Support with justification. Should end up in Rivers Section 2.	Appears in Section 2.
ID17010303PN0033_03 change to ID17010303PN0033L_0 L	Fernan Lake	27	Changed support to Full Support with justification. Should end up in Lakes Section 2.	Change ID number of AU to be consistent with Lake convention.
ID17010303PN0034_03	Fernan Creek – source to Fernan Lake	27	Changed support to Full Support with justification. Should end up in Rivers Section 2.	Appears in Section 2.
ID17010304PN0001_02 ID17010304PN0001_02 T	Chatcolet Lake	27	Zero (0) units, Lake tributaries. 4.77 units. 1st & 2nd order tributaries to Chatcolet.	Delete segment. Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010304PN0001L_0 L ID17010304PN0001L_0 LT	Chatcolet Lake	27	0.01 (0) units. OK, keep this segment as is.	Delete segment.
ID17010305PN0005_02	Hayden Lake	27	These are 1st & 2nd order tributaries to Hayden Lake.	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010305PN0005L_0 L	Hayden Lake	27	Changed causes to only Nutrients.	
ID17010305PN0010_03	Hayden Creek	27	Changed from Not Full Support to Not Assessed. Should end up in Rivers Section 3.	

AUs	Waterbody Name	Commentor	Comments	Responses
ID17010305PN0012_03	Rathdrum Creek	27	Changed to Full Support with justification. Should end up in Rivers Section 2.	
ID17010305PN0013_02	Twin Lakes	27	These are 1st & 2nd order tributaries to Twin Lakes.	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010305PN0013L_0L	Twin Lakes	27	Changed causes to only Nutrients.	
ID17010305PN0014_02	Fish Creek	27	Changed causes to only Thermal.	
ID17010305PN0016_02	Hauser Lake	27	These are 1st & 2nd order tributaries to Hauser Lake.	Change Type from Lakes to Rivers, and Units to miles. Move to Rivers Section 3.
ID17010305PN0016L_0L	Hauser Lake	27	Changed causes to only Nutrients.	

Appendix A.

Summary of DEQ's Proposed 303(d) Action's Regarding Water Temperature

Summary of DEQ's Proposed 303(d) Action's Regarding Water Temperature

Listed below are selected waters in Idaho that the Department of Environmental Quality (DEQ) has determined should be removed from the current 303(d) list, or not listed, for temperature as a pollutant. Reason's for delisting or not listing include:

- 1) Data quality did not meet minimums in Idaho's Waterbody Assessment Guidance II, i.e. more than a single grab sample temperature measurement is needed to judge impairment;
- 2) Frequency of exceedance less than assessment threshold, Idaho's WBAGII allows up to 10% exceedance of certain numeric criteria, including temperature, if the bio-assessment indicators are good;
- 3) Idaho WQS natural background provisions, and allowable de-minimus T increase of 0.3°C are met;

DEQ's proposed action varies depending on whether a water is currently listed or not, and whether there are other causes of impairment, which would cause a water to be listed, though not for temperature. The following three tables organize the selected waters by the type of action taken, and list the applicable reasons enumerated above.

Table 1. Waters in Idaho currently listed for temperature for which that Idaho proposes temperature be dropped as a pollutant either because; 1) the temperature data used for listing was insufficient, or 2) the human caused impairment is below allowable temperature increase. Since these waters are only listed for temperature they should be removed from the 303(d) list.

Stream name	WBID	On 1998 303(d) List (Yes/No)	Listing Data Source	Reason for Removing Temperature from listing
Worm Creek	16010202BR005	Yes	DEQ	Data quality, single temperature measurement
Santa Creek	17010304PN010	Yes	DEQ	Data quality, single temperature measurement
Hot Creek	17040213SK012	Yes	DEQ	Data quality, single temperature measurement
Lochsa River	17060303CL001,003,008,008,013,020	Yes	USFS	Less than de-minimus increase, HDR Modeling Report

Table 2. Waters in Idaho currently 303(d) listed which Idaho proposes be removed from the list because there are no human causes of impairment.

Stream name	WBID	On 1998 303(d) List (Yes/No)	Listing Data Source(s)	Reason for Delisting
Boulder Creek	17060303CL010	Yes	USFS	apriori natural
Fish Creek	17060303CL052...057	Yes	USFS	apriori natural
Holly Creek	17060303CL009	Yes	USFS	apriori natural

Stream name	WBID	On 1998 303(d) List (Yes/No)	Listing Data Source(s)	Reason for Delisting
Storm Creek	17060303CL032	Yes	USFS	apriori natural
Smithie Fork	17040217SK017	Yes	USFS, DEQ	apriori natural

Table 3. Waters in Idaho that were considered for 303(d) listing but were not listed.

Stream name	WBID	On 1998 303(d) List (Yes/No)	Data Source(s)	Reason for Not Listing
Running Creek	17060301CL008 ... 012	No	DEQ	apriori natural, less than 10% exceedance
Bear Creek	17060301CL047 ... 055	No	DEQ, USGS	apriori natural
Moose Creek	17060302CL026 ... 047	No	DEQ, USGS	apriori natural
Selway River	17060301CL001,00 4,014,022 & 17060302CL001, 006,022	No	DEQ, USFS	apriori natural, less than 10% exceedance
Indian Cr	17060205SL006	No	DEQ	apriori natural, less than 10% exceedance
Big Creek	17060206SL003 ... 016	No	DEQ	apriori natural, less than 10% exceedance
MF Salmon	17060205SL001 17060206SL001	No	DEQ, USFS	apriori natural, less than 10% exceedance

The above three lists are not comprehensive. They are a selection of waters that have been chosen because they qualify for one or more reason as not known to be impaired for temperature. Idaho reserve's the right to propose additional waters be removed from the 303(d) list, or not listed, for these reasons in the future.

Attached are several support documents:

- A) Report by HDR on modeling of water temperatures in the Lochsa River.
- B) Spreadsheet summarizing information on the limited extent of human activity in watersheds identified as a priori natural.
- C) Maps of watersheds identified as a priori natural.
- D) Summaries of temperature data showing less than 10% exceedance of Idaho's cold water aquatic life criteria.



State of Idaho
Department of Environmental Quality
Contract # C046

Final Report

Water Temperature of The Lochsa River and Selected Tributaries



Prepared by: HDR Engineering, Inc.
418 South 9th Street, Suite 301
Boise, Idaho 83702
(208) 342-3779

HDR

July 23, 2002



Mr. Don Essig
Idaho Department of Environmental Quality
1410 N. Hilton
Boise, Idaho 83706

Subject: Water Temperature Model for the Lochsa River and Selected Tributaries
(QRP00023) – Final Report

Dear Mr. Essig:

Enclosed is the Water Temperature Model for the Lochsa River and Selected Tributaries Report. It was a pleasure to work with you on this project. We believe the results of the modeling effort and subsequent analysis contribute much to the understanding of the Lochsa River watershed.

We sincerely appreciate your input and support during all phases of this project. We look forward to working with you again in the near future. Please feel free to call us if you have any questions at (208) 342-3779.

Sincerely,

HDR Engineering, Inc.

A handwritten signature in black ink that reads 'Jason Kent'.

Jason Kent, PE
Project Manager

Enclosures

Cc: David L. Clark, HDR Engineering, Inc.

Lochsa River Temperature Model

Prepared for



Idaho Department of Environmental Quality

Prepared by



418 South 9th Street
Suite 301
Boise, Idaho 83702

July 23, 2002

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Cover Photo: J. Fellós, HDR Engineering - 2000. Lochsa River.

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Executive Summary

The Lochsa River is located in the Clearwater National Forest in north central Idaho. It is formed by the confluence of the Crooked Fork and White Sand Creek. The river flows east-northeast to west-southwest through approximately 70 river miles of forested mountain and canyon terrain. Water temperatures at the mouth of the Lochsa River (near its confluence with the Selway River) at times exceeds Idaho cold water biota (CWB) maximum daily temperature criteria of 19°C average and 22°C instantaneous, or maximum daily high. For this reason, the Lochsa River was placed on Idaho's 303(d) list of water quality-impaired waters.

An assessment of water quality in the Lochsa watershed by Idaho Department of Environmental Quality (IDEQ) (Bugosh 1999) concluded that current summer temperatures in the Lochsa were not different from historic temperatures observed in the late 1950's prior to substantial anthropogenic, or human-caused, disturbance. Thus, the above-criteria temperatures were deemed a "natural condition" and not an impairment of water quality. This led IDEQ to propose the removal of the Lochsa River from the 303(d) list. This conclusion was not accepted by the U.S. Environmental Protection Agency (EPA) in their oversight role. It is for this reason that a water temperature modeling study was initiated on the Lochsa River.

The objectives of the Lochsa River Modeling Project were as follows:

- Develop a model that simulates historic daily average and maximum water temperatures in the Lochsa River and select tributaries during the summer months based on measured data.
- Apply the model to simulate the system under a range of scenarios for the purpose of understanding heat loading in the Lochsa River.

Water temperatures were to be modeled for the summer months of July and August for

1994, 1997, and 1998. These years were selected because of their range in hydrologic conditions: 1997 registered the second highest flow on record, while 1994 registered the sixth lowest flow on record. The year 1998 was an average flow year. The year 1998 was also selected because copious water temperature and flow data were collected during the summer months.

Model simulated temperature output was sought throughout the length of the Lochsa River, but specifically at Lowell, Idaho, Split Creek Packbridge, Wilderness Gateway, Eagle Mountain Packbridge, Mocus Point Packbridge, Jerry Johnson Packbridge, and Powell Ranger Station. In addition, temperature output was requested at the mouths of the modeled tributaries: Crooked Fork, White Sand Creek, Deadman Creek, and Canyon Creek.

Existing peer-reviewed temperature and water quality modeling programs were evaluated for their application to the Lochsa River Temperature Modeling Project. The candidate models were evaluated considering capabilities, limitations, input data requirements, minimum and maximum temperature predictions, applicability to the modeling project, and acceptance in the modeling community. Based on the characteristics of the candidate models and the selection criteria, the SNTMP program was selected.

Two system models were developed: a model for 1997-1998 (high flow and average flow, respectively) and one for 1994 (low flow). The model was first calibrated to mean daily water temperatures, and then calibrated to maximum daily water temperatures through adjustment of appropriate process variables.

After the temperature models were calibrated and validated, a single-parameter sensitivity analysis (Chapra 1997) was performed to identify key input variables in the model. It was found that air temperature, inflow temperature, and incoming solar radiation, respectively, were the three variables to which the average temperature model was most

sensitive. Incoming solar radiation, air temperature, and inflow temperature were the three variables that most influenced maximum temperature, respectively. In the SNTMP model, inflow temperature and air temperature can be directly changed by the user, while solar radiation is an internal parameter affected by several input variables.

Several model runs were performed to simulate alternate scenarios. As a result of these simulations, it was found that water temperatures did not meet Idaho CWB temperature criteria throughout the Lochsa River on the 90th percentile air temperature day. Increasing riparian vegetative shading to full potential would decrease Lochsa River daily average water temperature by as much as 1.35°C, not enough to meet Idaho CWB temperature criteria at Lowell, near the mouth of the river. Alternately, the water temperature of all tributaries to the Lochsa River would have to be reduced by more than 8°C to meet Idaho CWB temperature criteria. This scenario is not particularly reasonable, as many of the tributaries to the Lochsa River drain wilderness areas or unmanaged watersheds, and an 8°C decrease in water temperature is likely not physically possible in these areas.

Since the Lochsa River is an unregulated stream with little disturbance other than State Highway 12 and modest timber harvest over the past 45 years, the reduction in shade provided by riparian canopy cover is the primary disturbance likely to increase water temperature. Thus, the question to be answered was “what fraction of the departure between current canopy conditions and full potential canopy in the riparian zone is due to natural disturbances, and what fraction is due to human disturbances?” The question was investigated by quantifying the difference in riparian canopy conditions for stands of trees that are undisturbed or have natural changes and those that have human-caused changes. The SNTMP model was used to determine the difference in stream temperatures that may then be attributed to human activity.

It was found that between 75% and 97% of the difference in water temperature between the existing and full potential canopy cover conditions in the Lochsa River basin is due to natural disturbances. While human-caused disturbances increase water temperatures in the basin, natural disturbances are a more dominant factor in the difference between existing condition and full potential canopy cover water temperatures.

Introduction

The Lochsa River is located in the Clearwater National Forest in north central Idaho (Figure 1). It is formed by the confluence of the Crooked Fork and White Sand Creek (aka Colt Killed Creek). The river flows east-northeast to west-southwest through approximately 70 river miles of forested mountain and canyon terrain (Figure 2). Several small tributaries flow into the Lochsa River, including Canyon Creek and Deadman Creek. At the River's mouth near the town of Lowell, Idaho, the Lochsa River merges with the Selway River to create the Middle Fork of the Clearwater River.

Data collected by federal and state resource agencies and private companies were used to build a historical temperature model for the Lochsa River. The data used include meteorological data, stream geometry, stream and watershed hydrology, local topography, and vegetation data. The model was built to predict average and maximum daily water temperature throughout the Lochsa River and four tributaries, Crooked Fork, White Sand Creek, Deadman Creek, and Canyon Creek, for the mid-summer months of July and August of 1994, 1997, and 1998.

The years to be modeled were selected because of their range in hydrologic extremes: 1997 registered the second highest flow on record, while 1994 registered the sixth lowest flow on record. 1998 was considered an average flow year. 1998 was also selected because copious water temperature and flow data were collected during the summer months.

Model Selection

Evaluation of Existing Programs

Existing peer-reviewed temperature and water quality models were evaluated for their application to the Lochsa River Temperature Modeling Project. Each model's capabilities and limitations, along with an assessment of each, are shown in Table 1.

The candidate models were evaluated considering capabilities, limitations, input data

requirements, minimum and maximum temperature predictions, applicability to the modeling project, and acceptance in the modeling community. A brief description of each of the candidate models follows.

SNTEMP

SNTEMP and its companion program, SSTEMP, model temperatures in a stream as a function of hydrologic conditions, riparian and topographic shading, and meteorological conditions. The one-dimensional model assumes steady flow, complete mixing, and requires daily means for input variables. SNTEMP is a stream network model with a spatial grid as fine as 100 meters, while SSTEMP is a simplistic version of SNTEMP that can assess conditions for a single stream reach in a single time period. Both models call upon output from companion programs, SSSOLAR and SSSHADE, to provide data on short-wave radiation and shading percentages. Both SNTEMP and SSTEMP have text interfaces and are public domain models.

SNTEMP and its associated models were developed by the U. S. Fish and Wildlife Service's Instream Flow Group. This group subsequently became the U.S. Geological Survey—Mid-Continent Ecological Science Center (USGS-MESC). The USGS-MESC website (www.mesc.usgs.gov) provides the models for free download and also provides technical support.

Heat Source

Heat Source was developed as part of a Masters thesis at Oregon State University, and is currently supported by the Oregon Department of Environmental Quality (ODEQ). It is an energy-based finite difference temperature model with heavy reliance on geographic information system (GIS)-based input. Heat Source has fine internal spatial and temporal scales (100 ft, 1 minute) and is suitable for a reach scale of analysis. The model involves a wide variety of atmospheric, solar, and stream reach parameters. It has a spreadsheet-based user interface and is public domain, available on CD from ODEQ.

Figure 1. Project Vicinity Map

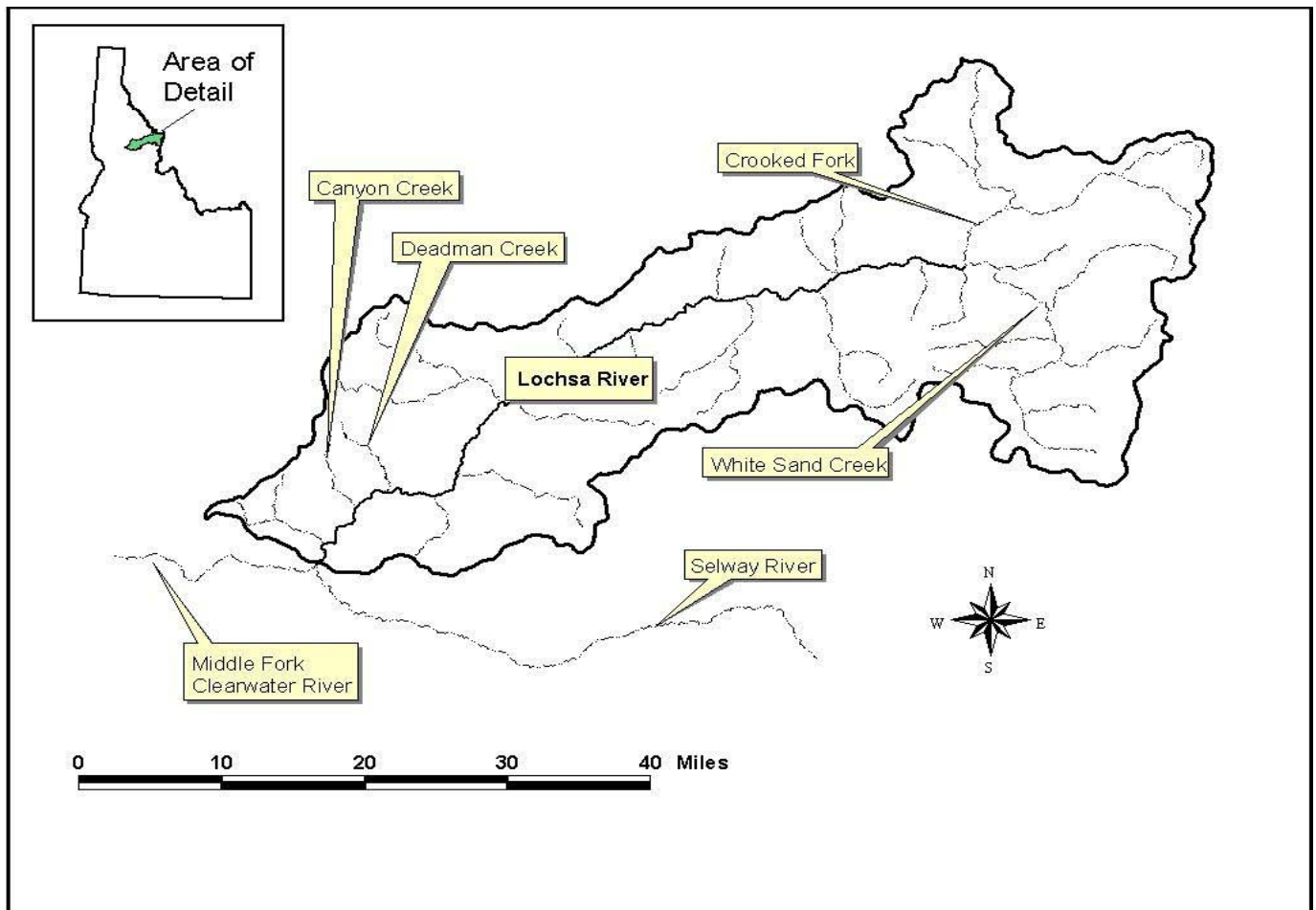


Figure 2. Photograph of Lochsa River



Model	Strengths	Weaknesses	Timestep	Applicability to Lochsa River Project	Criteria					
Process-Based Temperature Models					Mean/Max T	Network capability	Input parameters	Shading	Ease of use	Accepted
SNTEMP	Stream network model. Considers latitude and time of year, predicts topographic and riparian shading, and corrects climate data as function of elevation.	Uses algorithm to predict daily max. temps based on daily average temps. Cannot handle rapidly varying flows	daily	Applicable to project. Model known to Idaho DEQ and EPA, Public domain model. Good support network in place.	Only mean is directly calculated	Yes	Data-driven	Yes	Users manual, self-directed study, technical support	Peer-reviewed, widely used
Heat Source	Flexible time step model. Relies on Arc View for topographic input. Very fine temporal and spatial scale.	Not suited for a stream network application. Data-intensive model. Limitations in groundwater mixing and canopy density. Limited model support.	flexible	New technology, generally getting good reviews. Model familiar to Oregon DEQ but has limited project application outside of Oregon. Possibly applicable to project. Described by developer as a very data-intensive model. Public domain.	Calculates instantaneous temperatures for timestep	No	Heavily data-driven	Yes	Requires large amounts of data, little support	Minimally peer-reviewed, not used outside of Oregon
BasinTemp	Steady state, 1-D, GIS-linked model. Requires little collected data.	Assumes no cloud cover and does not use relative humidity data. Assumes linear relationship between mean and max. temps. Not suited for stream networks. Simplest model.	daily	New technology with limited feedback on use. May be too simplistic for this project due to its non-reliance on collected data. Proprietary model, work must be done by vendor (with associated cost).	Only mean is directly calculated	Yes	GIS-driven, requires minimum of field data	Yes	Model must be operated by Stillwater Sciences	Not peer-reviewed, new technology
Hybrid Combination Model Approaches										
SNTEMP / Heat Source	Advantages of modeling mean temperatures for July/August, and investigating maximum temperatures and diurnal changes during a period of interest.	Each node to describe multiplies the effort for setting up the Heat Source model. Requires that two distinct models be developed.	daily / flexible	Advantages of mean daily averages in the stream network, as well as maximum temps and diurnal changes in chosen segments.	See above	See above	See above	Yes	See above	See above
SNTEMP / SSTEMP	Can re-calculate maximum water temperature in a segment of interest using maximum values for air temperature	Does not directly calculate maximum temperature and cannot describe diurnal fluctuations.	daily	Each model can be calibrated to better represent maximum daily temperatures by adjustment of 3 or 4 empirical coefficients.	See above	See above	See above	Yes	See above	See above
2 calibrated SNTEMP models	Same as SNTEMP, with added value of a model calibrated to observed daily maximum temperatures.	While it is both feasible and acceptable, calibrating to maximum temperatures is not a typical operating procedure.	daily	Having two calibrated models increases the level of accuracy of the analysis. How well the maximum temperature model will calibrate is an unknown factor at this point. This option satisfies all project criteria.	See above	See above	See above	Yes	See above	See above
Multi-Constituent Water Quality Models										
CE-QUAL-W2	Flexible time step, 2-dimensional model that includes water quality parameters.	Simple shading function included in model. Extensive data requirements.	flexible	Powerful water quality model. Version 3.0 applicable to river systems. May be too sophisticated for economical application to project. Public domain model.	Calculates instantaneous temperatures for timestep	Yes	Data-driven	Simple short-wave solar radiation algorithm	Complicated model, little support	Peer-reviewed, widely used
CE-QUAL-RIV1	Flexible time step, 1-dimensional, steady and unsteady flow model with water quality parameters.	Hydrodynamics not linked with temperature.	flexible	May be applicable to project. Public domain model.	Calculates instantaneous temperatures for timestep	Yes	Data-driven	No	Complicated model, little support	Peer-reviewed
RMA-11	Inclusion of water quality parameters, 1-, 2- and 3-dimensional simulation, steady or unsteady flow, short timesteps	No shading included in model. Extensive data requirements. A 30-minute timestep is considered "relatively long".	flexible	Complex hydrodynamic and water quality model, may be too sophisticated for project. Proprietary model with prohibitive cost.	Calculates instantaneous temperatures for timestep	Yes	Data-driven	No	Complicated model, little support	Peer-reviewed
MIKE-11	Flexible time step, option of simplified or complete heat calculations, GIS-capable, stream network capable	Extensive data requirements.	flexible	Powerful hydrodynamic and water quality model. May be too sophisticated for economical application to project. Proprietary model with prohibitive cost.	Calculates instantaneous temperatures for timestep	Yes	Data-driven	Yes	Complicated model, e-mail support	Peer-reviewed

Table 1. Lochsa River Temperature Model Selection Matrix

BasinTemp

BasinTemp, developed by Stillwater Sciences, is a simple, one-dimensional, steady-state, network scale mechanistic temperature model, whose strength lies in its non-reliance on field-based data. As such, it is heavily reliant on GIS-based input data. It utilizes daily average input data to produce estimates of daily average water temperature and uses linear relationships to estimate daily maximum temperatures. It requires a minimum of atmospheric, flow, and water temperature data. It has a variable spatial network scale, allowing a network as fine as 30 meters. BasinTemp is a proprietary model that is not available to the general public at this time. All input data must be sent to Stillwater Sciences for model operation.

CE-QUAL-W2

CE-QUAL-W2 is a two-dimensional, laterally-averaged, hydrodynamic and water quality model that has been used to model over 200 waterbodies, including rivers, lakes, reservoirs, and estuaries. The model simulates temperature, dissolved oxygen (DO), the nitrogen, phosphorus, and organic carbon cycles, and up to three types of algae. It predicts instantaneous temperatures in a variable spatial scale within a user-defined temporal scale, which must be converted to average and maximum temperatures using post-modeling analysis techniques.

CE-QUAL-W2 is modular in nature, such that water temperature can be modeled with or without the interactions of other constituents. CE-QUAL-W2, developed by the U.S. Army Corps of Engineers—Waterways Experiment Station (USACE—WES), is a network-scale, public domain program and has both text and Windows input user interfaces. Output is currently text files with a Windows interface scheduled for release later this year.

CE-QUAL-RIV1

The Hydrodynamic and Water Quality Model for Streams (CE-QUAL-RIV1) is a one-dimensional, network-scale, unsteady flow model capable of dynamic simulations. CE-QUAL-RIV1 was developed by USACE—WES to simulate transient water

quality conditions associated with highly unsteady flow conditions that occur in regulated rivers. CE-QUAL-RIV1 allows simulation of rivers with multiple hydraulic control structures, such as run-of-the-river dams, waterway locks and dams, and regulation dams. The hydraulic model component requires that river geometry and boundary conditions are defined in order to perform hydraulic computations. CE-QUAL-RIV1 can simulate temperature, salinity, biological oxygen demand (BOD)-DO, the nitrogen and phosphorus cycles, phytoplankton in the water column, benthic algae, macrophytes, and bacteria. It predicts instantaneous temperatures in a variable spatial scale within a user-defined temporal scale, which must be converted to average and maximum temperatures using post-modeling analysis techniques. CE-QUAL-RIV1 has a text user interface and is a public domain program.

RMA-11

RMA-11, developed by Resource Management Associates, is a stream network scale finite element model for the one-, two-, or three-dimensional simulation of water quality in rivers, estuaries, and groundwater systems. This proprietary software was originally developed as the public domain model RMA-4 for the USACE. Its constituents include temperature, DO, the nitrogen and phosphorus cycles, algal growth and decay, and suspended sediments. RMA-11 is modular in nature, such that water temperature can be modeled with or without the interactions of other constituents. The user interface is DOS-based, and incorporates ASCII text files for data input. RMA-11 is a sophisticated proprietary model that is relatively expensive compared to the public domain models.

MIKE-11

The MIKE-11 model is proprietary software commercially available from DHI, Inc., formerly known as the Danish Hydraulic Institute. MIKE-11 allows dynamic water quality simulations and has a Windows user interface. It is a one-dimensional stream

network model capable of simulating water temperature and the nitrogen and phosphorus cycles, and is modular in nature, such that water temperature can be modeled with or without the interactions of other constituents. It predicts instantaneous temperatures in a variable spatial scale within a user-defined temporal scale, which must be converted to average and maximum temperatures using post-modeling analysis techniques. This is also a sophisticated model that is relatively expensive compared to the public domain models.

Hybrid Model Combinations

The use of combined models was considered in order to meet multiple project objectives. These objectives include analysis of both average and peak water temperatures. Also desired was the ability to model a stream network, as well as individual reaches. Evaluation of the candidate models indicated that no single model was capable of meeting all of these objectives. The use of two models provided the potential to combine the strengths of two tools to provide the capabilities required.

Three hybrid combination model options are summarized in Table 1. Combining SNTemp with other models was considered, since SNTemp appears to best meet most project objectives, including simulation of average temperatures in a stream network model, direct simulation of the effect of shade on water temperature, being peer-reviewed and in the public domain, utilizing field data-driven input parameters, and having good documentation and technical support. Combining Heat Source with SNTemp adds an ability to simulate diurnal variations in temperature. The drawback to this approach is the added complexity involved in developing two distinct models, both Heat Source and SNTemp. Combining SSTEMP with SNTemp links two companion models with similar input data. The stream segment model SSTEMP provides the ability to simulate maximum temperatures in a given stream reach but not diurnal variations. Alternately, a pair of SNTemp network models calibrated

first to average water temperatures, and then to maximum temperatures, may provide a better approach. The potential drawback to this approach is that calibration of maximum daily water temperatures is empirical and its suitability is unknown.

Summary of Model Features Required for Lochsa River Modeling Project

The candidate models were assessed for the Lochsa River Modeling Project based on the following criteria:

- Prediction of mean and maximum water temperatures
- River network capability
- Availability and requirements of input parameters
- Ease of use
- Peer reviewed and utilized within the scientific community

Each of these criteria is described in the following paragraphs.

Prediction of Mean and Maximum Water Temperatures

The selected model should simulate mean and maximum water temperatures at a minimum of a daily temporal scale, with a diurnal range, if possible. The selected model should simulate temperatures at several locations in the stream network.

River Network Capability

The selected model should simulate the entire Lochsa River from its headwaters to its mouth on a network scale. The stream network includes several tributaries that must be modeled as well, and the output from those tributaries is to be modeled as input to the Lochsa River at the same temporal scale.

Availability and Requirements of Input Parameters

Idaho Department of Environmental Quality (IDEQ) and the U.S. Forest Service (USFS) have collected data for several input parameters for use in the selected water

temperature model. The selected model should take advantage of these data, as one of the purposes of the project is to utilize a peer-reviewed model to produce a calibrated process-based water temperature model based on collected data from the Lochsa River basin.

Ease of Use

The selected model should be suitable for operation by HDR Engineering, Inc. and IDEQ and should not require an inordinate amount of time for data collection or data entry. The output from the model should be exportable to a spreadsheet or database program for easy processing and reporting. In addition, documentation for the selected model should be easy to follow and technical support should be reasonably accessible.

Peer Review and Utilization of Model Within the Scientific Community

The selected model should be peer-reviewed and utilized within the scientific community.

Model Selection and Recommendation

Based on the characteristics of the candidate models and the selection criteria described above, the HDR-IDEQ team selected SNTEMP for the Lochsa River Modeling Project. The SNTEMP model was calibrated to mean daily water temperatures, and then calibrated to maximum daily water temperatures through adjustment of appropriate process variables. Based on calibration and validation performance, two models were developed: one for 1997-1998 and one for 1994. This is discussed in greater depth in the Calibration and Validation section of this report.

SNTEMP was selected based on several characteristics, including its technical capabilities, applicability to the project, the stream network component of the program, existing support network, and availability as a public domain program. SNTEMP's main shortcoming is its use of an algorithm to determine maximum water temperatures instead of calculating them directly. The equation used in SNTEMP to determine maximum water temperatures is as follows:

$$T_{\max} = T_e - \left[(T_e - T_{\text{avg}})^{[-(k_x t_x)/(\rho c_p d)]} \right]$$

Where:

T_{\max} = Average maximum daytime water temperature (at sunset) at point of interest

T_e = equilibrium water temperature for average daytime conditions

T_{avg} = average daily water temperature at travel time distance upstream from point of interest

k_x = first order thermal exchange coefficient for daytime conditions

t_x = travel time from noon to sunset

ρ = density of water

c_p = specific heat of water

d = average flow depth

Other algorithms are used to determine equilibrium water temperature, average daily water temperature, travel time, and average depth. The maximum daily temperature model was calibrated to better predict the estimated maximum water temperature by re-estimation of appropriate empirical coefficients.

Model Structure

The SNTEMP model utilizes six input files that include measured data and two system control files, as described below:

Study File

The study file includes the locations and types of nodes that define the stream network system, as well as locations in the network where output is required.

Geometry File

The geometry file provides a network definition of the modeled streams, the site location and the stream geometry (e.g. channel width, depth, and gradient).

Shade File

The shade file includes data for parameters that contribute to the shading of the stream due to topographic and vegetative conditions.

Time Period Data File

This file is primarily used by SNTMP as a system file but includes two parameters that are used in the determination of incoming solar radiation: the dust coefficient and ground reflectivity.

Meteorology Data File

The meteorology data file includes all remaining meteorological data for the study reach for each day in the study period.

Hydrology Data File

The hydrology data file provides the mean daily stream flows and temperatures for the modeled streams and all tributaries to the stream network for each day in the study period.

Hydrology Node File

The hydrology node file contains information needed by the program on where hydrology data are required. No input data are included in this file.

Job Control File

The job control file contains information required by the program that defines the size of the network, the extent of output desired, years of data simulated, node counts, calibration factors, and file names. No input data are included in this file.

Input Data

The sources of the data that were acquired vary. Much of the measured data were furnished by the Clearwater National Forest. Most of these data came in electronic formats. Additional data used in the model were obtained from IDEQ, the USGS, Clearwater BioStudies, Inc., and the Tennessee Valley Authority (TVA).

The acquisition of the required measured data is described in Table 2. In addition, data reduction for collected data of key parameters

are described in more detail in the sections that follow.

Study File—Segmentation

The SNTMP model requires segmentation of the river network based on the following features and requirements:

- Required temperature output locations
- Confluences with certain tributaries with measured temperature data
- Locations of measured temperature data in the mainstem of the River
- Major changes in gradient
- Major changes in stream orientation
- Major changes in stream width

The Lochsa River temperature model segmentation is shown in Figure 3.

Shade File—Vegetation Parameters

East/West Crown Measurement

Used for determining vegetative shading, this parameter is defined as the average maximum diameter of the shade-producing strata of vegetation along the stream.

A crown diameter of 10 meters was assumed for all segments in the SNTMP model. No data are available that are specific to the study area.

East/West Vegetation Height

Used for determining vegetative shading, this parameter is the average height of the shade-producing strata of vegetation, measured from the water surface. Average height of trees data were taken from a GIS database provided by Clearwater National Forest. The GIS data recorded average values of stand height and stand crown closure, a measure of density, for each distinct stand in the Clearwater National Forest. Data for the stands that were directly adjacent to the streams of interest were collected, along with a weighting factor based on the relative length the stream. An average

Table 2. Data Collection Sources

Data File	Parameter	Data Source	Adjusted in calibration?
Study File	Segmentation	GIS software and USGS 7.5-minute maps—see text	No
Geometry File	Latitude, Elevation, Azimuth	GIS software and USGS 7.5-minute maps	No
	Manning's n	Clearwater BioStudies reports (Rosgen 1994)	No
	Width	Clearwater BioStudies reports	Yes
	Ground temperature	System default to mean annual air temperature	No
	Streambed thermal gradient	System default	No
Shade File	Latitude, Azimuth	See above	No
	Width	See above	Yes
	East/west topographic altitude	GIS software	No
	East/west crown measurement	Data not available specific to study area—see text	No
	East/west vegetation height	Clearwater National Forest's Timber Stand Management Record System—see text	No
	East/west vegetation offset	Aerial photography and digital aerial infrared imagery—see text	No
	East/west vegetation density	Clearwater National Forest's Timber Stand Management Record System—see text	No
Time Period File	Dust coefficient	Suggested values in User's Manual (Theurer et al. 1984)—TVA (1972)	No
	Ground reflectivity	Suggested values in User's Manual (Theurer et al. 1984)—TVA (1972)	No
Meteorology File	Meteorology station latitude and elevation	Remote Automated Weather Stations (RAWS) located at Powell and Lowell—see text	No
	Annual air temperature	Meteorological station located at Fenn Ranger Station	No
	Time period mean air temperature	RAWS located at Powell and Lowell	Yes
	Time period mean wind speed	RAWS located at Powell and Lowell	Yes
	Time period relative humidity	RAWS located at Powell and Lowell	Yes
	Time period percent sunshine	Meteorological station located at Missoula, Montana airport	No
	Observed ground level solar radiation	Not used	N/A
Hydrology Data File	Time period discharge and water temperature	USGS gage data, USFS gages and temperature monitors. See text	Yes
	Lateral inflow water temperature	System default to mean annual air temperature	Yes
	Reservoir inflow temperature	Not used	N/A
Hydrology Node File	None	N/A	N/A
Job Control File	None	N/A	N/A

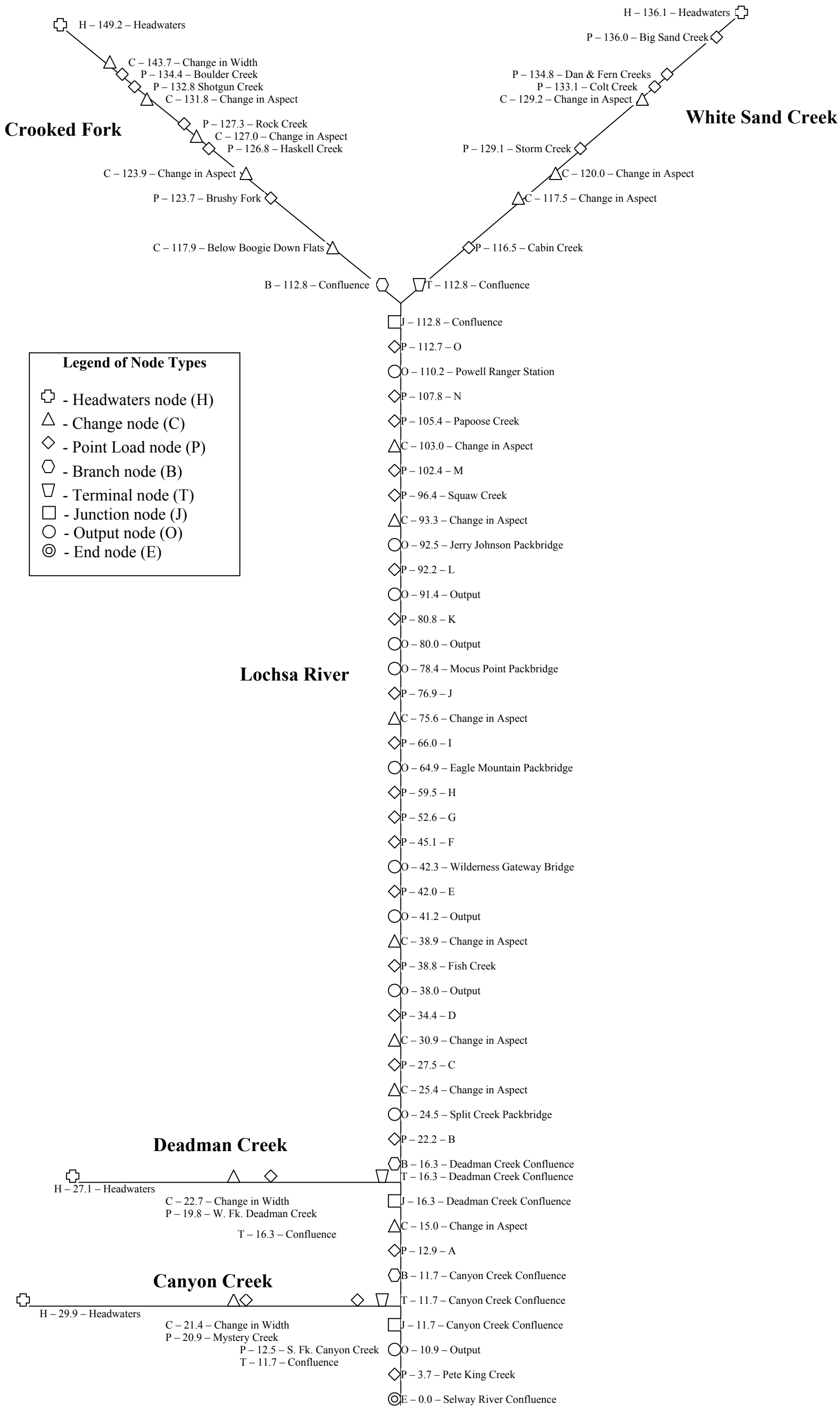


Figure 3. Schematic of Model Segmentation.

tree height was developed for each stream segment using the weighting factor for each of the stands.

East/West Vegetation Offset

This parameter is the average offset of the trunks of the shade-producing strata of vegetation from the edge of the stream.

Offset of the trunks of the riparian trees to the edge of stream was determined using aerial photography. For the Lochsa River, digital color infrared imagery was examined. An example of this imagery, photographed by IRZ Consulting (2001), is shown in Figure 4. For the four tributaries, black and white aerial photography stereo pairs were examined. The offsets used for each segment in SNTemp reflect an average offset for the corresponding reaches.

Figure 4. Color Infrared (CIR) Imagery of Lochsa-Selway Confluence

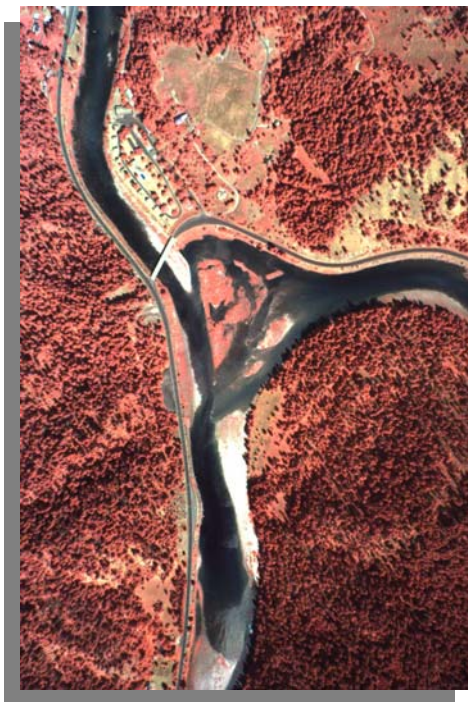


Photo: IRZ Consulting, 2001

East/West Vegetation Density

This parameter is the average screening factor, on a 0 to 100 percent scale, of the shade-producing strata of vegetation along the stream.

Vegetation density data were taken from the crown closure data for each stand from the Clearwater National Forest database, as described above. The vegetation densities used for reach segment in SNTemp reflect an average density for the corresponding examined reaches.

Meteorology Data File—Meteorology Station Latitude and Elevation

These data represent the location at which meteorology input data represent measured conditions. Because SNTemp only accommodates one set of meteorology data, only one set of station information can be entered into the model. SNTemp automatically applies adiabatic correction factors to air temperatures based on elevation and adjusts incoming solar radiation based on latitude.

SNTemp requires a set of meteorology data be provided from only one station. Ideally, this station would be located at the mid-point of the river network being studied. Most meteorology data for this project were collected from Remote Automated Weather Stations (RAWS) located near the river at two separate locations: 1) near Lowell, the downstream end of the Lochsa River, at about River Kilometer (RKM) 0.0, and 2) near Powell, Idaho, the upstream end of the Lochsa River, at about RKM 112.8. The air temperature, wind speed, and relative humidity data used in the SNTemp meteorology data file are weighted average values of the data from the Lowell and Powell RAWS. The weighted average corresponds with a meteorology station located at approximately RKM 101.5.

Hydrology Data File—Time Period Discharge and Water Temperature

These parameters describe the mean daily flow and mean daily water temperature for each day in the modeling period for each point of inflow into the system. Known discharges and water temperatures in the modeled streams, if available, are included in this data file.

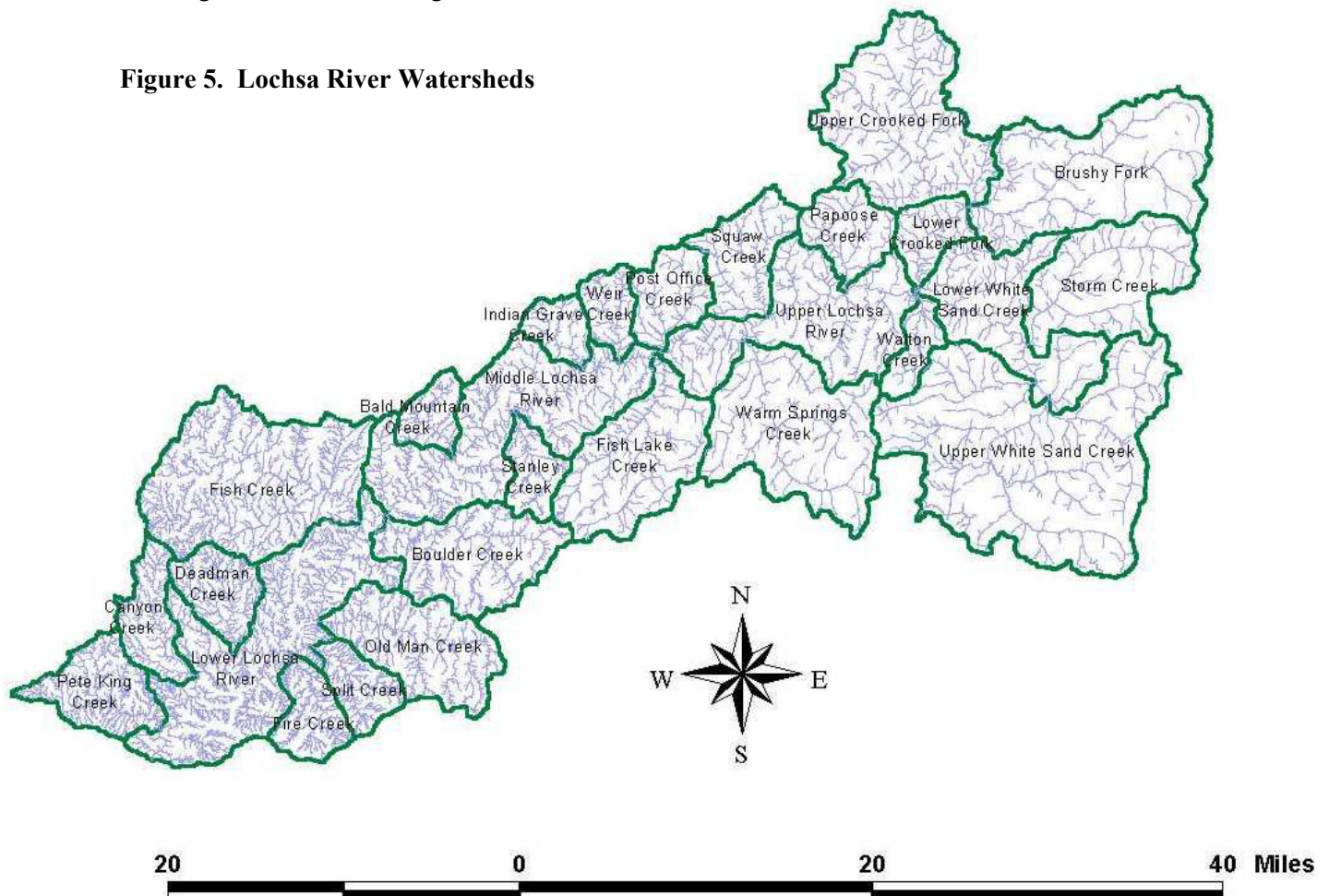
Discharge data were provided for all study years for the downstream end of the Lochsa River at the USGS Lowell gage. In addition, Clearwater National Forest staff collected discharge data for Pete King Creek, Canyon Creek, Deadman Creek, Fish Creek, Squaw Creek, Papoose Creek, Crooked Fork, and White Sand Creek for a portion of the study years. In some cases, discharge data were missing for large portions of the study period. These missing data were too large to be reproduced using the methods provided in the SNTMP model for synthesizing data. Therefore, linear interpolation was used to produce input to substitute for the missing data. In the few cases where extrapolation was necessary, the last known discharge was used to fill in the missing points.

Many of the tributary streams that were to be modeled in SNTMP as point source discharges had measured water temperature data but no associated flow rate. Estimated discharges were created using a normalization

to area method that determined the discharge of a stream based on the area of the tributary subbasin in relation to a discharge and subbasin area of a similar gaged stream. This method was also used to create discharges on the gaged streams for years in which field data were not collected. Subbasin areas were determined from the watershed delineation map developed by Don Essig of IDEQ, shown in Figure 5.

This normalization to area method did not result in a total discharge equal to the observed Lochsa River discharge at Lowell. There are a number of potential explanations for this discrepancy. Two of the most important explanations are that minor laterals and groundwater recharge were not considered. The remainder of the unaccounted for flow was redistributed geographically throughout the system by adjusting the flows of each of the streams by an equivalent percentage, such that the total estimated flow at Lowell matched the observed flows.

Figure 5. Lochsa River Watersheds



After the redistribution of the remaining discharge, the stream discharges were grouped and summed based on the model segmentation and converted to metric units for entry into SNTMP.

Measured temperature data were not collected in all streams for all study years. Therefore, measured data for each stream were used when they were available. When measured data were not available, measured temperature data for the most similar stream were used. Stream temperatures were then grouped and averaged based on the model segmentation for entry into SNTMP.

Data were not available for approximately the first two weeks of July 1998 for many upstream tributaries (the upstream-most stream with measured water temperatures for the first two weeks of July was Skookum Creek, which enters Lochsa River at RKM 63.1). For these streams without measured temperatures, the water temperature on July 1, 1997, was used as a surrogate, and water temperatures were linearly interpolated between the July 1 value and the first measured value. The 1997 (high flow) data were used instead of the 1994 (low flow) data because the hydrology in 1997 was more similar to 1998 than was 1994 hydrology.

Model Calibration and Validation

Average Temperature

Calibration

The model was calibrated by adjusting input parameters for the modeled tributaries and global calibration coefficients for July 1 to August 31 in 1994, 1997, and 1998. Headwater flows, headwater temperatures, and groundwater temperatures were adjusted in calibration of the tributaries. In addition, stream widths were adjusted in Crooked Fork, Canyon Creek, and Deadman Creek during model calibration. Table 3 shows the default, starting, and final calibration values for the 1997-1998 and 1994 models

Daily mean water temperatures in the Lochsa River were calibrated to measured temperatures by adjusting the global calibration coefficients for daily average air temperature, daily average wind speed, and daily average relative humidity. For entry into the model, these measured meteorological values were averaged between the Lowell and Powell meteorological stations. Adjusting these values using the global coefficients returns the meteorological parameters to values that better describe daily mean water temperatures. Daily average relative humidity values were increased by 20 percent to account for the increased humidity at the air-water interface. This practice is recommended in Bartholow (1989).

All four modeled tributaries were calibrated based on measured water temperature at the mouths of each stream. None of the four tributaries were gaged at or near the headwaters; thus, headwaters flows were used for tributary calibration in the model. Similarly, headwater temperatures were not known, so headwater temperatures were also used for calibration of tributaries. Groundwater temperatures were not measured at any point in the stream network; therefore, the groundwater temperature parameter was used for calibration of tributaries. Mean annual air temperature was used as the default groundwater temperature and as a starting point for calibration. Finally, for Canyon Creek, Deadman Creek, and Crooked Fork, stream widths were adjusted to calibrate the water temperature of modeled tributaries to the measured water temperature at the mouth of each stream.

Table 4 shows the results of the model calibration for 1998 (average flow). Absolute Mean Error (AME), median error (median), and percentage of error, or percent of difference from the measured value, (%) were calculated for each calibration node. All AME values were below 1°C, and the overall error was held below 5 percent.

The criterion for model validation was that the AME value for average temperatures each year was to be below 1°C. This criterion was

Table 3. Default, Starting, and Final Values for Calibration Parameters

			Default Values	1997-1998 Model Values	1994 Model Values
Global Calibration Coefficients					
	Air temperature		1	0.9	0.9
	Wind speed		1	1.1	1.1
	Relative humidity		1	1.2	1.2
	% sunshine		1	1	1
	Solar radiation		1	1	1
Groundwater Temperature					
River	Description	River KM			
Crooked Fork	Headwaters to Boulder Creek	149.2 to 134.4	10.03	4.0	4.0
	Boulder Creek to Shotgun Creek	134.4 to 132.8	10.03	5.5	5.5
	Shotgun Creek to Mouth	132.8 to 112.8	10.03	7.0	7.0
White Sand Creek	Wilderness Boundary to Dan & Fern Creeks	136.1 to 134.8	10.03	5.5	5.5
	Dan & Fern Creeks to Mouth	134.8 to 112.8	10.03	7.0	7.0
Deadman Creek	Headwaters to Mouth	27.1 to 16.3	10.03	12.0	3.0
Canyon Creek	Headwaters to Mystery Creek	29.9 to 20.9	10.03	6.9	2.0
	Mystery Creek to Mouth	20.9 to 11.9	10.03	6.9	6.9
Stream Width					
Crooked Fork	Headwaters to Hopeful Creek	149.2 to 143.7	3.4	1.7	1.7
	Hopeful Creek to Haskell Creek	143.7 to 131.8	9.6	4.8	4.8
	Haskell Creek to Brushy Fork	131.8 to 127.0	16.6	8.3	8.3
	Brushy Fork to change in aspect	127.0 to 123.9	20.8	10.4	10.4
	Change in aspect to change in aspect	123.9 to 117.9	26.4	13.2	13.2
	Change in aspect to mouth	117.9 to 112.8	26.3	13.1	13.1
White Sand Creek	Big Sand Creek to Storm Creek	136.1 to 129.2	21	21.0	21.0
	Storm Creek to change in aspect	129.2 to 120.0	19.3	19.3	19.3
	change in aspect to change in aspect	120.0 to 117.5	26.7	26.7	26.7
	change in aspect to mouth	117.5 to 112.8	30	30.0	30.0
Lochsa River	Confluence to change in aspect	112.8 to 103.0	50.2	50.2	50.2
	Change in aspect to change in aspect	103.0 to 93.3	38.1	38.1	38.1
	Change in aspect to change in aspect	93.3 to 75.6	29.1	29.1	29.1
	Change in aspect to Fish Creek	75.6 to 38.8	35.1	35.1	35.1
	Fish Creek to change in aspect	38.8 to 30.9	37.1	37.1	37.1
	Change in aspect to change in aspect	30.9 to 25.4	44.3	44.3	44.3
	Change in aspect to Deadman Creek	25.4 to 16.3	48.7	48.7	48.7

Table 3. Default, Starting, and Final Values for Calibration Parameters (continued)

			Default Values	1997-1998 Model Values	1994 Model Values
Stream Width					
River	Description	River KM			
Lochsa River (continued)	Deadman Creek to change in aspect	16.3 to 15.0	36.9	36.9	36.9
	Change in aspect to Canyon Creek	15.0 to 11.7	32.1	32.1	32.1
	Canyon Creek to mouth	11.7 to 0.0	41.7	41.7	41.7
Deadman Creek	Headwaters to West Fork Deadman Creek	27.1 to 22.7	5	3.2	3.2
	West Fork Deadman Creek to mouth	22.7 to 16.3	6.7	4.2	4.2
Canyon Creek	Headwaters to Mystery Creek	29.9 to 21.4	4.1	1.6	1.6
	Mystery Creek to mouth	21.4 to 11.7	6.2	2.5	2.5

Table 4. 1998 (Average Flow) Average Temperature Model Calibration Results

River	River KM	AME (°C)	Median Error (°C)	Range (°C)	
				Min	Max
Lochsa River	0.0	0.84	0.14	-4.00	1.40
Deadman Creek	16.3	0.81	0.09	-2.77	1.77
Lochsa River	42.3	0.70	-0.30	-2.73	1.05
Lochsa River	64.9	0.79	-0.63	-2.86	0.97
Lochsa River	78.4	0.69	-0.47	-2.08	1.13
Crooked Fork	112.8	0.81	0.24	-1.69	3.25
White Sand	117.9	0.76	0.36	-1.48	3.43
Average AME			0.77		
% Difference from Measured			4.69%		

met for 1998 (average flow) and 1997 (high flow), but 1994 (low flow) validation statistics indicated that re-calibration for 1994 was necessary. As a result, 1994 was separated from the model and was calibrated as a separate model using similar parameters as the original model: headwater discharge, headwater temperature, groundwater temperature, and global calibration coefficients. Stream widths were not changed in the 1994 model

calibration. In addition, Canyon Creek was not calibrated in the 1994 model because it was already calibrated to 1994 measured data in the original model due to the lack of 1998 measured data. Results of 1994 average temperature model calibration are shown in Table 5.

Table 5. 1994 (Low Flow) Average Temperature Model Calibration Results

River	River KM	AME (°C)	Median Error (°C)	Range (°C)	
				Min	Max
Lochsa River	0.0	0.54	0.04	-1.52	1.78
Canyon Creek	11.7	0.49	-0.32	-1.41	0.84
Deadman Creek	16.3	1.11	0.21	-3.00	3.49
Average AME			0.71		
% Difference from Measured			4.55%		

Validation

Table 6 shows the results of average temperature model validation for 1997 (high flow). The AME for each node was below 0.9°C, and overall difference from measured temperatures was slightly above 4 percent.

Table 6. 1997 (High Flow) Average Temperature Model Validation Results

River	River KM	AME (°C)	Median Error (°C)	Range (°C)	
				Min	Max
Lochsa River	0.0	0.54	-0.09	-2.02	0.87
Canyon Creek	11.7	0.50	-0.04	-1.64	1.06
Deadman Creek	16.3	0.53	0.35	-0.82	1.36
Lochsa River	42.0	0.59	-0.34	-1.99	1.30
White Sand	117.9	0.86	0.29	-1.03	2.61
Average AME			0.60		
% Difference from Measured			4.08%		

Maximum Temperature

Calibration

Maximum water temperature calibration was accomplished by adjustment of four regression coefficients in the job control file (Theurer et al. 1984). The regression coefficients relate measured average daily air temperature to estimated maximum daily air temperature using the following model:

$$T_{ax} = T_a + [a_o + a_1 H_{sg} + a_2 R_h + a_3 (S / S_o)]$$

Where:

T_{ax} = maximum daytime air temperature (° C)

T_a = average daily air temperature (° C)

H_{sg} = ground level solar radiation (J/m²/sec)

R_h = relative humidity (decimal)

S/S_o = percent possible sunshine (decimal)

a_o, a_1, a_2, a_3 = regression coefficients

The maximum daily air temperature is used by SNTEMP to find the maximum daily water temperature for a given day at all model

nodes. This maximum air temperature regression model is the only method SNTEMP uses to calculate maximum water temperatures.

Maximum temperatures calculated using the above equation are not reported in SNTEMP output. Thus, a hand calculation was performed to compare the result of the equation, maximum air temperature, to the measured maximum air temperature on a random day – July 28, 1998. Final calibration regression coefficients and measured values were entered into the equation. The solar radiation value was obtained by entering the complete set of input parameters into the SSTEMP model. Values of the coefficients and variables were as follows:

$$\begin{aligned} T_a &= 20.87^\circ\text{C} \\ H_{sg} &= 216.13 \text{ J/m}^2/\text{s} \\ R_h &= 80.2\% \\ S/S_o &= 67.3\% \\ a_o &= -9.89 \\ a_1 &= 0.0082 \\ a_2 &= 2.79 \\ a_3 &= 0.5 \end{aligned}$$

The result of the equation was a maximum air temperature of 15.33°C, several degrees below the measured maximum air temperature of 23.48°C. While the difference between the two values is substantial, this is not surprising, as maximum air temperature is not treated as a state variable, rather as the only means of calibrating the SNTEMP daily average temperature model to maximum temperatures.

The maximum air temperature regression coefficients were modified from the program default values and values given in Theurer et al. (1984) using trial and error. The coefficients for the 1997-1998 (high flow-average flow) model were different than those used in the 1994 (low flow) model. Tables 7 and 8 show maximum temperature model calibration results for 1998 and 1994, respectively.

Table 7. 1998 (Average Flow) Maximum Temperature Model Calibration Results

River	River KM	AME (°C)	Median Error (°C)	Range (°C)	
				Min	Max
Lochsa River	0.0	1.14	-1.01	-3.07	0.97
Deadman Creek	16.3	0.97	0.25	-3.89	2.53
Lochsa River	42.3	1.93	-1.97	-3.47	0.43
Lochsa River	64.9	0.86	-0.16	-2.81	2.59
Lochsa River	78.4	1.03	-0.42	-2.59	1.53
Crooked Fork	112.8	2.76	-2.93	-5.23	1.23
White Sand	117.9	1.40	1.36	-1.14	6.18
Average AME % Difference from Measured			1.40 7.17%		

Table 8. 1994 (Low Flow) Maximum Temperature Model Calibration Results

River	River KM	AME (°C)	Median Error (°C)	Range (°C)	
				Min	Max
Lochsa River	0.0	0.81	-0.60	-2.74	1.19
Canyon Creek	11.7	0.46	0.17	-1.48	1.17
Deadman Creek	16.3	1.47	0.97	-3.09	3.99
Average AME % Difference from Measured			0.91 5.05%		

Validation

Table 9 shows the results of maximum temperature model validation for 1997 (high flow). The AME for the validation nodes averaged 1.31°C, with overall difference from measured values below 8 percent. The errors for the maximum temperature models are higher than those for the average temperature models and can be attributed to SNTemp's lack of a robust maximum temperature model.

The results of the maximum temperature model validation illustrate a key limitation of the SNTemp model, that which constrains the ability to develop a more elaborate calibration to maximum daily temperatures. An alternative model selection would be necessary to expand the analysis of maximum daily temperatures.

Table 9. 1997 (High Flow) Maximum Temperature Model Validation Results

River	River KM	AME (°C)	Median Error (°C)	Range (°C)	
				Min	Max
Lochsa River	0.0	0.72	-0.22	-2.69	1.62
Canyon Creek	11.7	1.26	0.86	-2.52	5.14
Deadman Creek	16.3	1.15	1.01	-0.49	3.18
Lochsa River	42.0	1.63	0.50	-0.79	2.56
White Sand	117.9	1.76	0.63	-3.11	5.67
Average AME % Difference from Measured			1.15 7.05%		

Model Simulations

Following model calibration and validation, the models were used to simulate scenarios to answer the following six questions posed by IDEQ:

1. What are predicted water temperatures under current canopy conditions?
2. What are predicted water temperatures with full potential canopy cover?
3. What input variable most explains predicted water temperatures?
4. How much decrease in thermal load would be necessary to meet Idaho's CWB criteria on a day that air temperature reaches the 90th percentile of the annual peaks in seven-day average of daily maximum air temperature?
5. How much of this decrease in thermal load could be provided by increased stream shading?
6. How much cooling in tributary inflow temperatures would be needed for the Lochsa River to meet CWB criteria at Lowell on the 90th percentile air temperature day?

Simulation 1—What are predicted water temperatures under current canopy conditions?

An "existing conditions" water temperature model was calibrated and validated (see

previous section) to current canopy conditions. The current canopy conditions are summarized in Table 10. Modeled temperature values under existing canopy conditions are summarized as the Baseline Condition in Table 11.

Simulation 2—What are predicted water temperatures with full potential canopy cover?

“Full potential canopy cover” was simulated by changing the vegetative shade parameters of crown width, crown height, offset, and percent (%) density for each segment of the modeled system. The changes were attained by assuming a “passive restoration” strategy, where the dominant species and habitat type would be allowed to grow to its full potential with no anthropogenic changes, nor changes due to fire or disease. The full potential was determined by observing the 80th percentile value for the tree height and canopy density variables from nearby stands with similar habitat types. Table 10 shows the habitat type groups for each of the stream segments, and the canopy densities for the existing and full potential canopy scenarios.

The theoretical maximum potential for a wilderness, unmanaged, untouched stand of trees is the 50th percentile of that stand; average values of the stand that are already at maximum potential. However, stands in the Lochsa River basin are subject to human management. Even under wilderness conditions, these stands are susceptible to fire and disease. Based on discussion with Clearwater National Forest silviculturist Bill Wulf (2001), the 80th percentile of the tree height and canopy density parameters was used for this simulation. The 80th percentile of these variables represent the natural disturbances that are an integral part of the forest landscape.

Two full potential canopy cover scenario were simulated: Scenario 1 reflects passive restoration strategy for all tributaries and the south/east bank of the Lochsa River only, and Scenario 2 reflects passive restoration strategy for all tributaries and both banks of the Lochsa River. Scenario 1 was simulated to

acknowledge the continued presence of U.S. Route 12. In this scenario, the south/east bank of the Lochsa River was modeled with full potential canopy cover, while the north/west bank of the Lochsa River exhibited existing canopy cover. Scenario 2 simulates the abandonment of U.S. Route 12 to allow full potential canopy cover to generate on both banks as a result of passive restoration.

The average changes in temperature for the July-August modeling period are shown in Table 11 for the full canopy simulations. The daily average and daily maximum water temperatures under full potential canopy conditions, averaged over the modeling period, are compared to baseline conditions throughout the Lochsa River in Figures 6 and 7, respectively.

Under full potential canopy conditions, daily average water temperatures of the Lochsa River at the USGS gage would be approximately 1.0 to 1.5°C cooler than under existing canopy conditions in the modeled years. Maximum water temperatures would be decreased approximately 1.4 to 2.1°C for the same period. These changes in water temperature are not enough to meet either Idaho CWB daily average or daily maximum temperature criteria.

An additional model was run using tree height and canopy density values based on the 98th percentile of nearby stands. Average decreases in temperature were 1.3° and 2.0°C greater than those seen in the 80th percentile simulation, respectively. Water temperatures would be reduced sufficiently to meet the Idaho CWB criterion of 22.0°C for maximum temperature; however, daily average stream temperatures in the Lochsa River still would not meet Idaho CWB average temperature criterion of 19.0°C under this scenario. An average stand of trees growing to sizes

River	Reach	River KM	Habitat type group (Clearwater NF TSMRS)	Existing conditions					Potential full canopy - 80th percentile, Scenario 1					Potential full canopy - 80th percentile, Scenario 2				
				Crown width (m)	Height (m)	East Offset (m)	West Offset (m)	Density (%)	Crown width (m)	Height (m)	East Offset (m)	West Offset (m)	Density (%)	Crown width (m)	Height (m)	East Offset (m)	West Offset (m)	Density (%)
Crooked Fork	Headwaters to Hopeful Creek	149.2 to 143.7	Moist - S/SAF/MH	10	22.6	2	2	37.1	18	23.3	1	1	63	18	23.3	1	1	63
	Hopeful Creek to Haskell Creek	143.7 to 131.8	Moist - S/SAF/MH	10	22.6	2	2	37.1	18	23.3	1	1	63	18	23.3	1	1	63
	Haskell Creek to Brushy Fork	131.8 to 127.0	Moist - S/SAF/MH	10	26.1	2	2	32.3	18	23.3	1	1	63	18	23.3	1	1	63
	Brushy Fork to change in aspect	127.0 to 123.9	Moist - S/SAF/MH	10	24.7	2	2	32.1	18	27.3	1	1	54	18	27.3	1	1	54
	Change in aspect to change in aspect	123.9 to 117.9	Wet - WRC	10	30	2	2	11.2	18	32.9	1	1	74	18	32.9	1	1	74
	Change in aspect to mouth	117.9 to 112.8	Wet - WRC	10	30.7	4	4	15.8	18	32.9	1	1	74	18	32.9	1	1	74
White Sand Creek	Big Sand Creek to Storm Creek	136.1 to 129.2	Moist - S/SAF/MH	10	26.9	2	2	37.2	18	29.3	1	1	71	18	29.3	1	1	71
	Storm Creek to change in aspect	129.2 to 120.0	Moist - WRC/WH	10	26.3	2	2	41.4	18	26.9	1	1	55	18	26.9	1	1	55
	change in aspect to change in aspect	120.0 to 117.5	Moist - WRC/WH	10	27.8	2	2	47.9	18	28.1	1	1	54	18	28.1	1	1	54
	change in aspect to mouth	117.5 to 112.8	Moist - WRC/WH	10	29.9	4	4	47.8	18	28.1	1	1	54	18	28.1	1	1	54
Lochsa River	Confluence to change in aspect	112.8 to 103.0	Moist - WRC/WH	10	27.8	9	20.9	45.6	18	30.7	8.6	20.9	75	18	30.7	8.6	8.6	75
	Change in aspect to change in aspect	103.0 to 93.3	Moist - WRC/WH	10	29.4	7	40.9	51.8	18	30.7	8.6	40.9	75	18	30.7	8.6	8.6	75
	Change in aspect to change in aspect	93.3 to 75.6	Moist - WRC/WH	10	25.3	9.6	30.6	49.1	18	30.7	8.6	30.6	75	18	30.7	8.6	8.6	75
	Change in aspect to Fish Creek	75.6 to 38.8	Moist - WRC/WH	10	23.2	9.3	22.4	33.4	18	27	8.6	22.4	67	18	27	8.6	8.6	67
	Fish Creek to change in aspect	38.8 to 30.9	Moist - WRC/WH	10	20.7	12.9	27.3	32.1	18	27	8.6	27.3	67	18	27	8.6	8.6	67
	Change in aspect to change in aspect	30.9 to 25.4	Moist - WRC/WH	10	19.7	6.5	16.1	28.4	18	27	8.6	16.1	67	18	27	8.6	8.6	67
	Change in aspect to Deadman Creek	25.4 to 16.3	Moist - WRC/WH	10	22.8	10.9	44.2	28.2	18	27	8.6	44.2	67	18	27	8.6	8.6	67
	Deadman Creek to change in aspect	16.3 to 15.0	Moist - WRC/WH	10	25.1	14.9	59.8	35.5	18	26.8	8.6	59.8	67	18	26.8	8.6	8.6	67
	Change in aspect to Canyon Creek	15.0 to 11.7	Moist - WRC/WH	10	24.7	11.4	13.8	42.1	18	26.8	8.6	13.8	67	18	26.8	8.6	8.6	67
	Canyon Creek to mouth	11.7 to 0.0	Moist - WRC/WH	10	27.6	16.5	25.6	32.0	18	26.8	8.6	25.6	67	18	26.8	8.6	8.6	67
Deadman Creek	Headwaters to West Fork Deadman Creek	27.1 to 22.7	Moist - WRC/WH	10	25.4	2	2	35.3	18	31	2	2	68	18	31	2	2	68
	West Fork Deadman Creek to mouth	22.7 to 16.3	Moist - WRC/WH	10	27.2	2	2	37.4	18	31	2	2	68	18	31	2	2	68
Canyon Creek	Headwaters to Mystery Creek	29.9 to 21.4	Moist - WRC/WH	10	25.5	2	2	39.3	18	31	2	2	68	18	31	2	2	68
	Mystery Creek to mouth	21.4 to 11.7	Moist - WRC/WH	10	31.7	2	2	47.0	18	31	2	2	68	18	31	2	2	68
Note: Baseline—Existing canopy conditions Scenario 1—Full potential canopy cover assuming the continued presence of U.S. Route 12 Scenario 2—Full potential canopy cover assuming passive restoration in place of U.S. Route 12																		

Table 10. Current and Full Potential Canopy Cover Conditions

Table 11. Output from Full Potential Canopy Cover Models, Average for Modeling Period

RKM	Average Temperature Model			Maximum Temperature Model		
	Baseline	Δ Temp Scenario 1	Δ Temp Scenario 2	Baseline	Δ Temp Scenario 1	Δ Temp Scenario 2
1994 (low flow)						
0.0	18.99	-1.42	-1.45	20.87	-2.05	-2.08
42.3	17.73	-1.49	-1.49	20.23	-2.31	-2.31
78.4	15.88	-1.18	-1.18	18.15	-2.12	-2.12
1997 (high flow)						
0.0	17.02	-0.94	-0.95	18.51	-1.39	-1.41
42.3	15.86	-0.98	-0.98	17.96	-1.63	-1.63
78.4	14.21	-0.76	-0.76	16.15	-1.51	-1.51
1998 (average flow)						
0.0	19.38	-1.08	-1.09	21.07	-1.59	-1.60
42.3	18.28	-1.15	-1.15	20.59	-1.85	-1.85
78.4	16.39	-0.91	-0.91	18.54	-1.73	-1.73

Note: Baseline—Existing canopy conditions

Scenario 1—Full potential canopy cover assuming the continued presence of U.S. Route 12

Scenario 2—Full potential canopy cover assuming passive restoration in place of U.S. Route 12

Figure 6. Full Potential Canopy Cover Models vs. Baseline Model: Average Temperature, Averaged Over Modeling Period

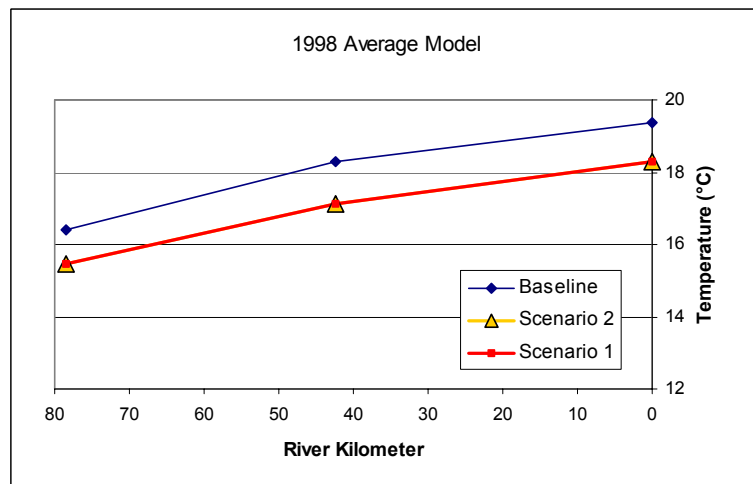
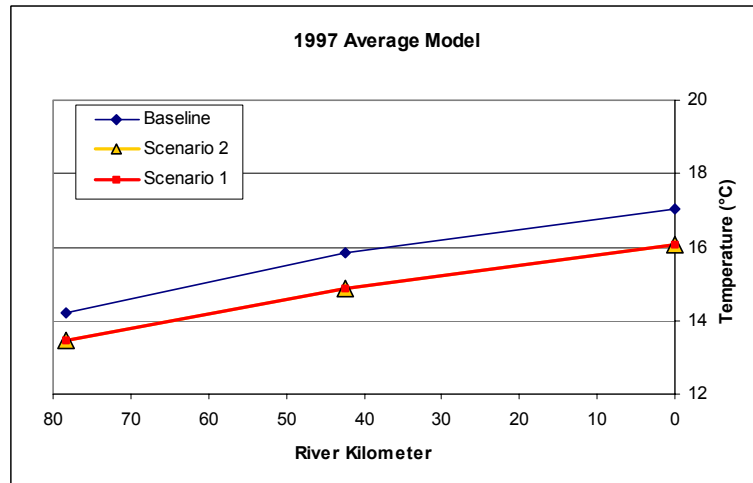
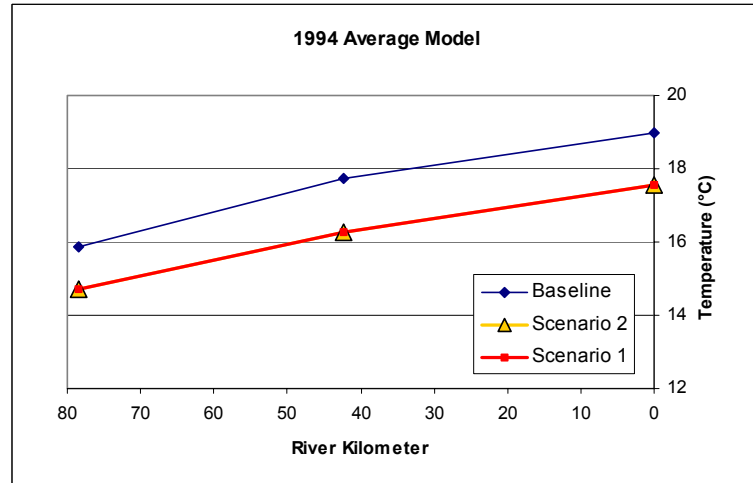
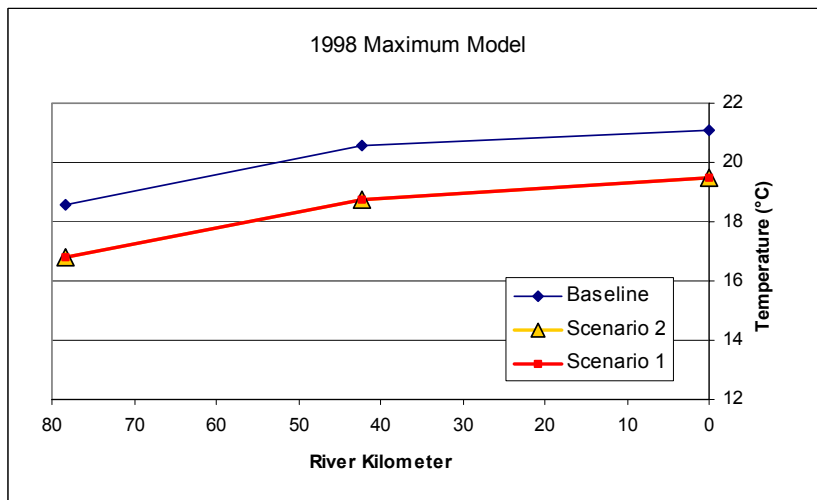
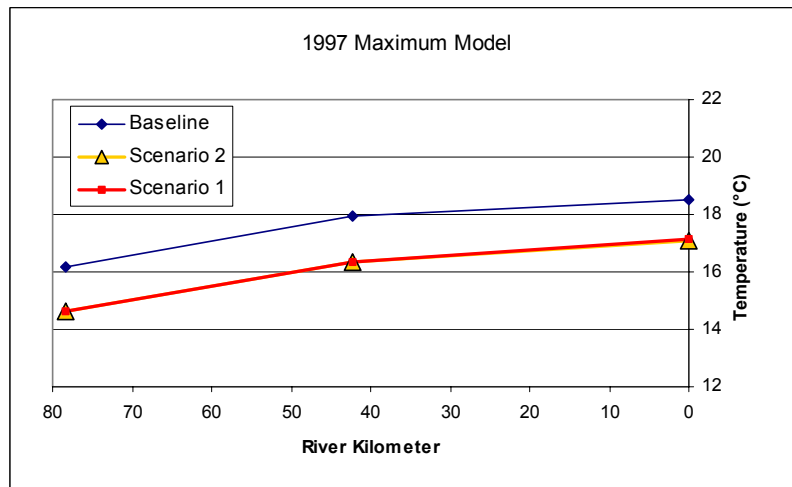
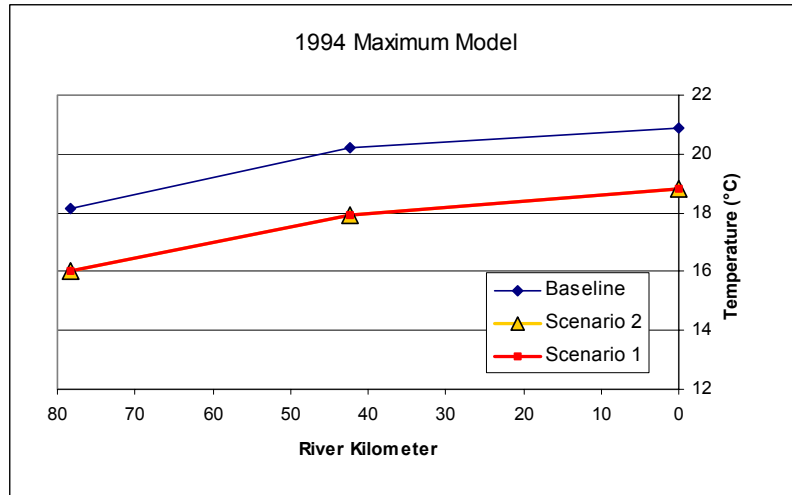


Figure 7. Full Potential Canopy Cover Models vs. Baseline Model: Maximum Temperature, Averaged Over Modeling Period



indicated by the 98th percentile for these two variables is not considered attainable in the Lochsa River basin, even with a full passive restoration effort (Wulf 2001). Therefore, the 80th percentile for the variables was used to attain a more plausible simulation.

Simulation 3—What input variable most explains predicted stream temperatures?

This question can easily and accurately be answered, in the context of the SNTMP models, using a sensitivity analysis. A sensitivity analysis is a method of identifying the important parameters and understanding the general behavior of a model by systematically changing the value of one or more input parameters (Chapra 1997). A sensitivity analysis is useful because of its role in model validation and evaluating model results when input has been changed. Other features of a sensitivity analysis include: 1) It assists in identifying the input parameters that contribute only marginally to the functional relationships of the model; 2) It quantitatively measures the change in output due to variations in the input; and 3) It describes the degree to which input parameter values can be altered without significantly affecting the model output (Hendrickson 1984).

The sensitivity of SNTMP to various input parameters was tested by parameter perturbation of one baseline parameter per analysis (Chapra 1997). The percentage of the change of each parameter was based on what can realistically be seen in the physical system.

A parameter perturbation sensitivity analysis is performed by varying each of the model parameters while holding the other terms constant (Chapra 1997). One method of varying the parameters is raising and lowering the value of the parameter being tested a fixed percent. This is how the sensitivity analysis was performed in this study.

Sensitivity analyses involving perturbation of 12 parameters were performed and compared to quantify the sensitivity of the output to the input. The 1998 (average flow) model of the Lochsa River was selected as the model to be

tested. The 62-day time series for a single parameter was increased by 10 percent from the baseline, and the model was run with the modification to the single parameter. This model was then run with a reduction of 10 percent from the baseline. This process was repeated for all 12 parameters. For each treatment, the change in output water temperature at the downstream-most node was compared to the baseline. The value that each treatment differed from the baseline was plotted in Figures 8 and 9 for average temperature and maximum temperature models, respectively. The total °C each parameter varied from the baseline is given in Table 12.

As shown in Figures 8 and 9, the parameters that the 1998 (average flow) model were most sensitive to were air temperature, inflow temperature, solar radiation, stream width, relative humidity, and stream flow. Five of these six parameters were also recognized as the top six most sensitive parameters in a sensitivity analysis described in Bartholow (1989). Note that the relative “importance” of an input parameter to ultimate downstream water temperature predictions varies between the average and maximum water temperature models, as shown in Table 12.

Figure 10 plots the full range of values for each of the input parameters. Comparing the full range of input to the change in output based on parameter perturbation, given in Figures 8 and 9, gives a good indication of the sensitivity of the system to each parameter. For example, in Figure 8, 10 percent increases and decreases of the relative humidity and stream flow input parameters result in an approximately equal change in output temperature. However, values of stream flow vary more in the 1998 data set than do values of relative humidity, as shown in Figure 10. Because of the great range of stream flows over the course of the two month data set, the stream flow variable can be considered more important than relative humidity in explaining stream temperatures.

Figure 8. Sensitivity of the Output Water Temperature Predictions of the 1998 Average Temperature Model to the 10% Increase and Decrease of Selected Input Parameters

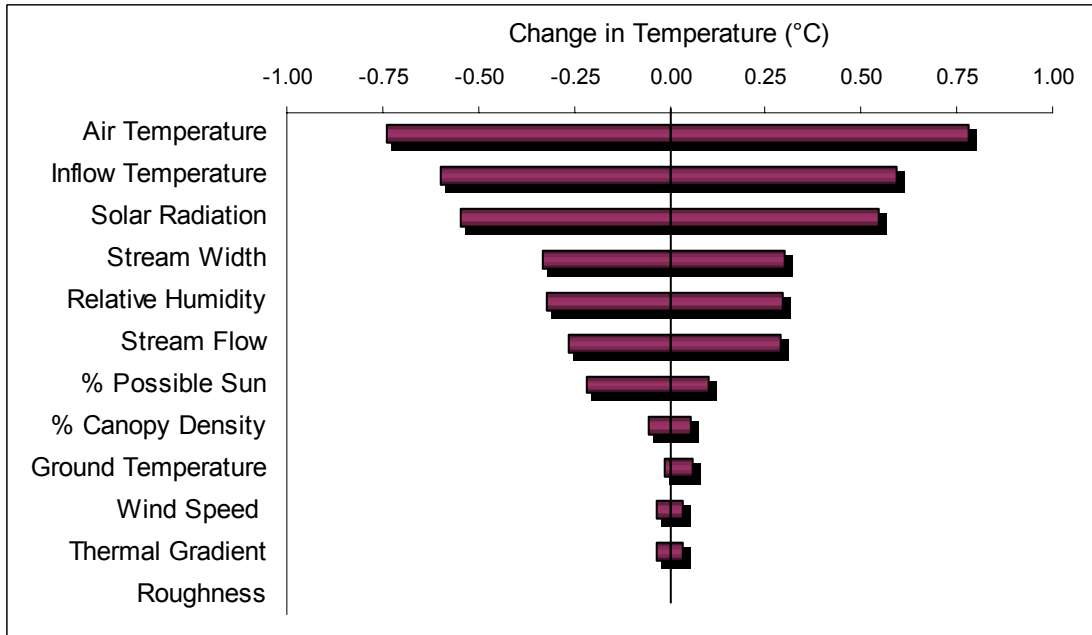


Figure 9. Sensitivity of the Output Water Temperature Predictions of the 1998 Maximum Temperature Model to the 10% Increase and Decrease of Selected Input Parameters

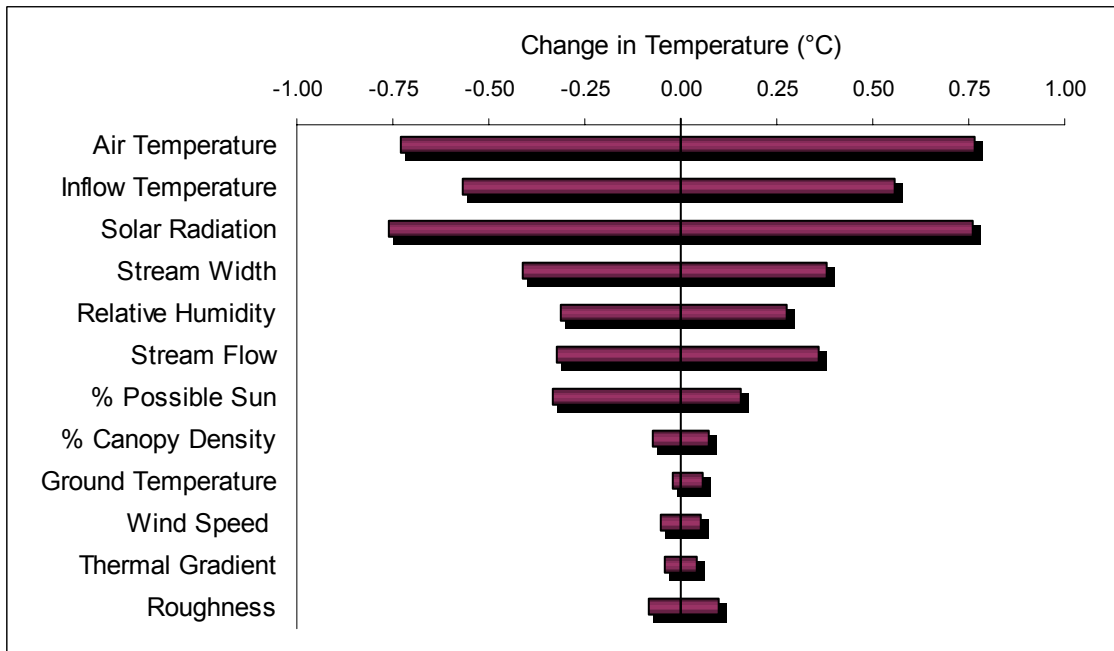


Figure 10. Temporal Range of Input Parameters at Lochsa River RM 42.3, 1998 Model

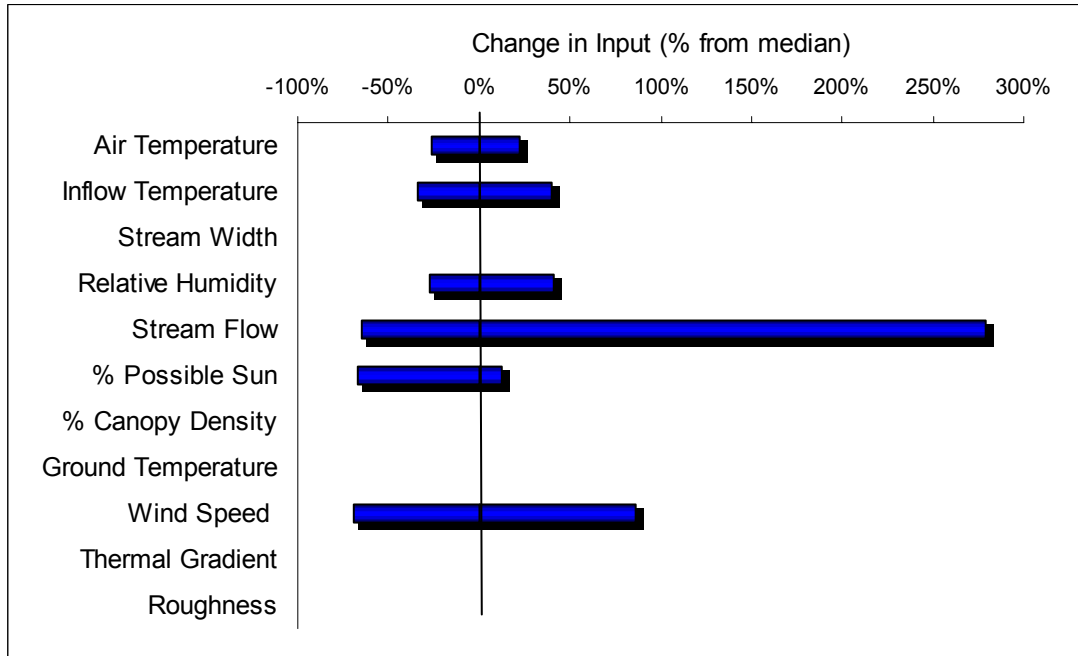


Table 12. Sensitivity of the Temporal Scale Input Parameter Values and Output Water Temperature Predictions of the 1998 Models Based on $\pm 10\%$ Parameter Perturbation¹

Parameter	Scale	Input Range		Average T Model (°C)	Maximum T Model (°C)
		Min %	Max %		
Air Temperature	Temporal	-26.3%	21.9%	1.52	1.50
Inflow Temperature	Temporal & Spatial	-33.9%	40.3%	1.19	1.12
Solar Radiation	Temporal	²	²	1.09	1.52
Stream Width	Spatial	--	--	0.63	0.79
Relative Humidity	Temporal	-27.0%	41.0%	0.62	0.59
Stream Flow	Temporal & Spatial	-64.5%	278.9%	0.55	0.68
% Possible Sun	Temporal	-66.9%	11.9%	0.32	0.49
% Canopy Density	Spatial	--	--	0.11	0.15
Ground Temperature	Spatial	--	--	0.07	0.08
Wind Speed	Temporal	-69.6%	86.6%	0.07	0.10
Thermal Gradient	Constant	--	--	0.07	0.08
Roughness	Spatial	--	--	0.00	0.18

¹ – Input ranges are measured in percentage difference from the median, and output ranges are measured in total °C change from baseline temperature.

² – Ranges of incoming solar radiation cannot be obtained easily from SNTEMP output. See text for further explanation.

(Note: A sensitivity analysis was performed on the solar radiation parameter by adjusting the global calibration coefficient for solar radiation in the job control file. The range of solar radiation in the input set is determined internally by the model and is not recorded in the model output. Therefore, the range of input values could not be determined. However, the results of the sensitivity analysis for solar radiation are included in Figures 8 and 9 and Table 12.)

Based on the above analysis, it can be inferred that air temperature is the input variable that most explains stream temperatures in the Lochsa River. Inflow water temperature is another important input variable. However, the great variability of the stream flow input underscores its significance to Lochsa River water temperatures, as the Lochsa River is not flow regulated.

Simulation 4—How much decrease in thermal load would be necessary to meet Idaho’s CWB criteria on a day that air temperature reaches the 90th percentile of the annual peaks in seven-day average of daily maximum air temperature?

The Lochsa River falls within National Climatic Data Center—Idaho Climate Division 4, in which there are three official weather stations. The study site lies closest to the McCall, Idaho, weather station (Coop Station ID # 105708). Analysis of maximum temperature data recorded at the McCall station indicates that 7-day average maximum air temperature exceeded the 90th percentile (32.78°C) during the period of July 23 through August 1, 1994. The 90th percentile was not exceeded in 1997 (high flow) or 1998 (average flow).

Of the July 23 through August 1, 1994, period, the 7-day average maximum temperature on August 1 most closely matched the 90th percentile (32.94°C). The 1994 (low flow) maximum temperature model was run for August 1 (Julian Day 213) to answer this question.

The average flow at the Lochsa River gage near Lowell on August 1, 1994, was 18.21 m³/s. Measured temperatures indicate the average daily water temperature on this date was 22.3°C; 3.3°C above the average daily temperature criterion. The maximum measured water temperature on this date was 25.2° C; 3.2°C above the instantaneous temperature criterion.

For the water temperature at this section of the Lochsa River to decrease to the instantaneous criterion on this date, approximately 2.432x10⁸ joules (J) (2.305x10⁵ BTU, 5.813x10⁴ C) would have to be removed from the river.

The average temperature of 22.3°C reflects an average value of water temperature throughout a 24-hour period. A daily thermal load contributes to this temperature. To decrease the water temperature at this location to the average water temperature criterion, a thermal load of approximately 2.167x10¹³ J/day (2.054x10¹⁰ BTU/day, 5.179x10⁹ C/day) would have to be removed from the river.

Simulation 5—How much of this decrease in thermal load could be provided by increased stream shading?

Energy, in units of joules (J), British Thermal Units (BTU), or kilocalories (C), cannot be extracted from the SNTMP model output without significant changes to the source code. However, increasing vegetative shade in the reach can simulate a reduction of thermal load. The increased shading prevents energy, in the form of solar radiation, from entering the river. The decreased temperature as a result of increased vegetative shading reflects the reduction in thermal load input to the Lochsa River.

The full potential canopy cover simulation, as described above, simulates reduced thermal conditions due to increased stream shading. Table 13 compares output from the two full potential canopy cover scenarios with the baseline simulation on the 90th percentile air temperature day, August 1, 1994.

As shown in Table 13, full potential canopy cover can decrease the average stream temperature on August 1, 1994, at RKM 0.0 by as much as 1.35°C. However, since the target decrease is 2.76°C, increasing stream shading to full potential canopy cover will not decrease water temperatures below the average temperature criterion. Maximum temperatures at the same location can be reduced by as much as 1.88°C under the 80th percentile full potential canopy cover scenario. The target reduction in maximum water temperature to meet the instantaneous criterion is 1.32°C. Thus, on the 90th percentile air temperature day represented by August 1, 1994, the maximum water temperature criterion can be met if stream shading is increased to full potential canopy cover conditions.

Simulation 6—How much cooling in tributary inflow temperatures would be needed for the Lochsa River to meet CWB criteria at Lowell on 90th percentile air temperature day?

Model inflow water temperatures on August 1, 1994, were adjusted to answer this question. The inflow temperatures were reduced using a trial-and-error process until the Idaho CWB temperature criteria were met for both daily average temperature (19.0°C) and maximum temperature (22.0°C). A total tributary reduction of 8.53°C would be needed to meet Idaho CWB temperature criteria at Lowell on August 1, 1994. The average temperature criterion is the limiting factor, as the maximum temperature criterion is met with an approximately 4.6°C reduction in inflow temperature. This conclusion is consistent with the results of Simulations 2 and 5, in which a change in vegetative shading resulted in a greater decrease in maximum water temperature than average water temperature.

Decreasing all tributaries by an average of 8.53°C in the mid-summer is not a physically attainable goal. Figure 11 compares the measured average water temperature for August 1, 1994 with the simulated water temperature on the same date and the CWB

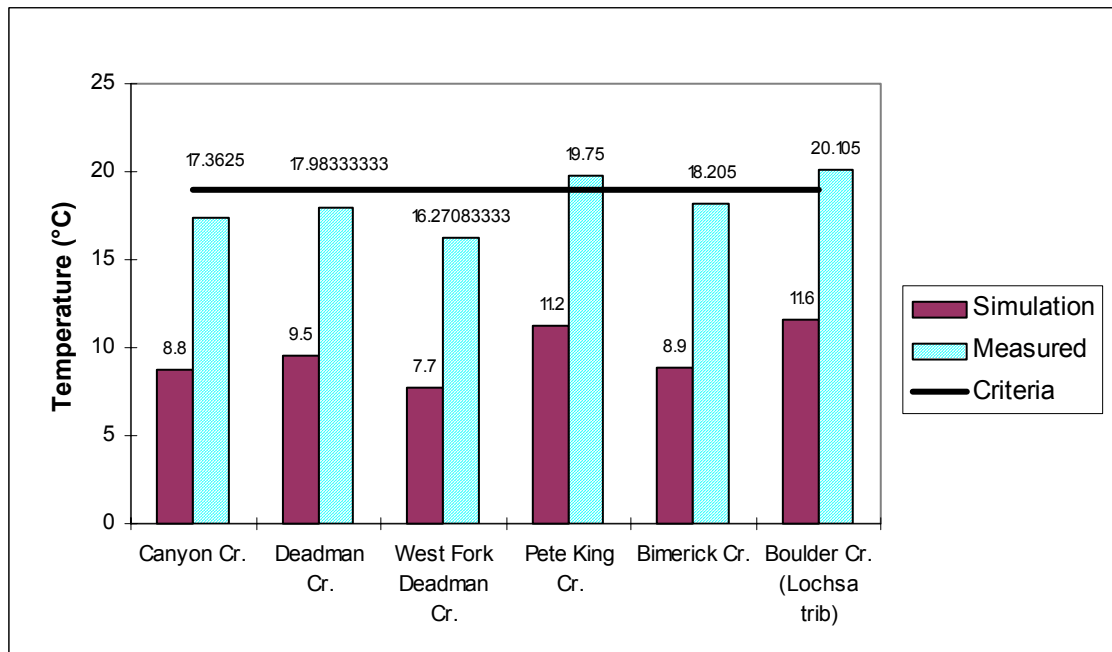
criterion. Many of these tributaries are in unmanaged (i.e. Bimerick Creek) or wilderness (i.e. Boulder Creek) areas, and riparian cover is at or near maximum potential throughout the creeks. The simulated temperatures are represented at the mouths of each of the creeks, implying that temperatures would be even colder upstream. Two of the tributaries, Boulder Creek and Pete King Creek, have average measured water temperatures at the mouths of the creeks higher than the 19°C CWB criterion on August 1, 1994. As stated earlier, Boulder Creek drains a mostly un-managed area. Inducing a reduction of approximately 8.5°C on this day is very unlikely.

Table 13. Full Potential Canopy Cover Simulation Results for August 1, 1994

RKM	Average Temperature Model			Maximum Temperature Model		
	Baseline (°C)	Δ Temp Scenario 1 (°C)	Δ Temp Scenario 2 (°C)	Baseline (°C)	Δ Temp Scenario 1 (°C)	Δ Temp Scenario 2 (°C)
0.0	21.76	-1.33	-1.35	23.32	-1.86	-1.88
Target Δ Temp (°C)		2.76		1.32		

Note: Baseline—Existing canopy conditions
 Scenario 1—Full potential canopy cover assuming the continued presence of U.S. Route 12
 Scenario 2—Full potential canopy cover assuming passive restoration in place of U.S. Route 12

Figure 11. 1994 July-August Simulated vs. Measured Tributary Water Temperatures, Simulation 6



Discussion

Results of the model simulations indicate the following:

- Water temperatures in the Lochsa River exceed Idaho CWB temperature criteria on a 90th percentile air temperature day.
- The reduction in thermal load to meet Idaho CWB temperature criteria on a 90th percentile air temperature day would be approximately 2.167×10^{13} J/day (2.054×10^{10} BTU/day, 5.179×10^9 C/day).
- Allowing passive restoration strategies to generate full potential canopy cover in riparian areas throughout the watershed would decrease average and maximum water temperatures but not enough to satisfy Idaho CWB temperature criteria.
- To satisfy Idaho daily average temperature criteria on a 90th percentile air temperature day without adjusting canopy cover, inflow temperatures for all tributaries in the Lochsa River watershed would have to be reduced by more than 8°C. This is unrealistic as the water temperatures at the mouths of many tributaries would be as low as 7.7° C or lower in the months of July and August.
- Air temperature, inflow temperature, and stream flow are the input variables that are most important in determining water temperature in the Lochsa River.

Conclusions

A water temperature model of the Lochsa River and four of its tributaries, Crooked Fork, White Sand Creek, Deadman Creek, and Canyon Creek, was developed based on measured meteorological and hydrologic data in 1994, 1997, and 1998. Other measured data used in the model included stream geometry, stream and watershed hydrology, local topography, and vegetation data. After a comprehensive evaluation process of several temperature models and hybrid model combinations, the model selected to simulate water temperatures

was SNTemp, developed by the U.S. Fish and Wildlife Service (Theurer et al. 1984).

Two models were developed: a 1994 model and a 1997-1998 model. These years were selected due to their range in hydrologic extremes: 1997 registered the second highest flow on record, while 1994 registered the sixth lowest flow on record. The year 1998 was considered an average flow year. The year 1998 was also selected because copious water temperature and flow data were collected during the summer months.

The models predicted average daily water temperatures throughout the modeled system with an average calibration error of less than 0.8°C and a validation error of 0.6°C. Maximum temperatures were also predicted using the maximum air temperature regression method within SNTemp.

After the temperature models were calibrated and validated, a single-parameter sensitivity analysis (Chapra 1997) was performed to identify key input variables in the model. It was found that air temperature, inflow temperature, and incoming solar radiation, respectively, were the three variables to which the average temperature model was most sensitive. Incoming solar radiation, air temperature, and inflow temperature were the three variables that most influenced maximum temperature, respectively.

Several model runs were performed to simulate alternate scenarios. As a result of these simulations, it was found that water temperatures exceeded Idaho CWB temperature criteria throughout the Lochsa River on the 90th percentile air temperature day. Increasing riparian vegetative shading to full potential would decrease Lochsa River water temperature but not enough to meet Idaho CWB temperature criteria. Alternately, the water temperature of all tributaries to the Lochsa River would have to be reduced by more than 8°C in order for the Lochsa River to meet Idaho CWB temperature criteria. This latter step does not seem feasible, as it would require unrealistically low temperatures (e.g. 7.7°C or lower) in some tributaries during the hottest months of the year.

Canopy Cover Refinement

Introduction

Water temperature modeling of the Lochsa River and its tributaries Crooked Fork, White Sand Creek, Canyon Creek, and Deadman Creek, explored the effects of riparian canopy on water temperature (see discussion in the previous sections of this report). The original modeling study indicated that water temperatures in the Lochsa River exceeded the Idaho maximum daily temperature criteria for cold water biota (CWB) under existing canopy conditions. In addition, modeling of full potential canopy cover conditions (defined as the 80th percentile of tree height and crown closure for a large sample of measured stands in the vicinity of the study reach) showed that increased canopy cover would reduce stream temperatures, but that the Idaho CWB temperature criteria would still be exceeded.

The analysis showed the departure between existing and full potential canopy conditions for riparian canopy cover and the associated change in water temperature. However, this analysis did not distinguish between the differences in cover and resulting water temperature due to natural disturbances, such as lightning-caused fires, disease, and wind, and those due to human-caused disturbances, such as timber harvest and human-caused fires.

Since the Lochsa River is an unregulated stream with little disturbance other than State Highway 12 and modest timber harvest over the past 45 years, the reduction in shade provided by riparian canopy cover is the primary disturbance likely to increase water temperature. Thus, the question to be answered is “what fraction of the departure between current canopy conditions and full potential canopy in the riparian zone is due to natural disturbances, and what fraction is due to human disturbances?” This question is investigated in the present study by quantifying the difference in riparian canopy conditions for stands of trees that are undisturbed or have natural changes and those

that have human-caused changes for the same modeling period as the previous study (July and August of 1994, 1997, and 1998). The SNTMP model was used to determine the difference in stream temperatures that may then be attributed to human activity. Thus, the objective of this study is to assess the difference in water temperatures in the Lochsa River and four tributaries based on changes in riparian vegetation. Differences between natural and human-caused disturbances in vegetation are evaluated.

Methods

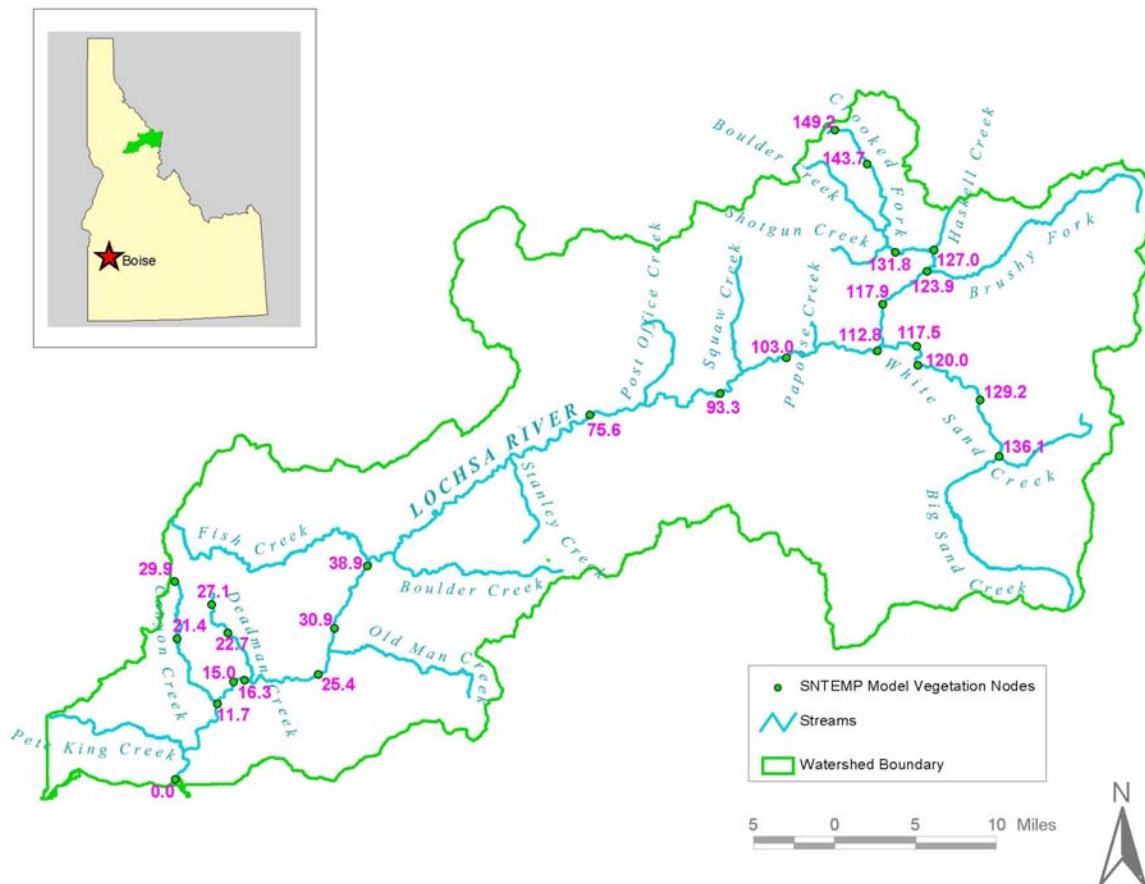
Clearwater National Forest 2001 Forest Inventory Vegetation Data, known as the “cstands database,” were used for this study. The data were stratified based on location, defined in Table 10, and change activities, defined as natural or human-caused disturbances that affect the trees in a stand. Change activities were recorded in the cstands database by USFS personnel during on-site field visits. The stands were identified as having human-caused disturbances, natural disturbances, or no disturbances by using codes that identified the cause of the disturbance. The codes were linked to the change activities (either having human-caused, natural, or no disturbances) as shown in Table 14. Codes that begin with the numbers “49” are typically burning activities that follow a harvest. However, the cstands database does not indicate when the harvest was or to what extent the stand was harvested. In these cases, the change activities were considered to be fire-caused.

The stands were then organized into the riparian vegetation reaches defined in the shade file of the original SNTMP model (Figure 12).

Table 14. Clearwater National Forest Vegetation Change Codes

Field Code	Description	Was Cause Of Disturbance Fire, Harvest, Or Natural?	Change Activity
4113	Human Caused	Harvest	Stand
4230	Human Caused	Harvest	Sanitation/Salvage
4250	Natural	Natural	Natural Changes
4260	Human Caused	Fire	Man Caused Fire Damage
4270	Human Caused	Harvest	Permanent Land Clearing
4471	Human Caused	Fire	Burning
4976	Human Caused	Fire	Burn Hand Piles
4978	Human Caused	Fire	Broadcast Burn
4985	Human Caused	Fire	Wildlife Burn
4986	Human Caused	Fire	Hand Piling
4987	Human Caused	Fire	Fireline Construction
4994	Human Caused	Fire	Fuelbreak
4996	Human Caused	Fire	Natural Abatement
4997	Human Caused	Fire	Burn Landings

Figure 12. Map of Lochsa River Basin and Locations of Vegetation Reaches



As was done for the full potential canopy cover simulation, only the crown closure and tree height parameters from the database were used in the study. The crown diameter and distance from bank parameters were not changed because new information for these parameters was not available. Average crown closure and tree height were calculated for each activity grouping of stands in each vegetation reach. The activity grouping of stands were “human-caused disturbances,” “no human-caused disturbances,” and “existing conditions.” These are not the same as the vegetation codes. Stands that were identified as possessing human-caused disturbances were considered in the “human-caused disturbances” grouping. Stands that were identified as possessing natural disturbances were considered in the “no human-caused disturbances” grouping along with those stands that were not identified as possessing any disturbances. The “existing conditions” grouping included all measured stands.

Also as in the original study, the crown closure parameter in the cstands database was used to represent the canopy density parameter in the SNTMP shade input file. From this point forward, the crown closure parameter shall be referred to as canopy density. See the Input Data section of this report for details on the data reduction procedure for the canopy density and tree height parameters.

The new canopy density and tree height data were entered into a new set of shade files in the SNTMP model for the existing conditions and no human-caused disturbances scenarios. Model output of the two scenarios were tabulated and graphed with the full potential canopy cover scenario from the original study.

Three model scenarios were run. The existing conditions scenario represented the existing condition of the riparian canopy at the time of data collection, 2001 in this case, and used the “existing conditions” shade file. The no human-caused disturbances scenario represented the riparian canopy if human-caused disturbances had not occurred, and used the “no human-caused disturbances”

shade file. The full potential canopy cover scenario was the 80th percentile of tree height and canopy cover for the dominant habitat type of a large local sample of stands. This scenario was unchanged from the original study.

The new shade files were run with the input files of the original models (1994 and 1997-1998) to predict water temperatures. The predicted water temperatures for the existing conditions and no human-caused disturbances scenarios were tabulated and graphed with the water temperatures of the full potential canopy cover scenario.

Results

Vegetation Data

Based on two single factor ANOVAS, the full potential canopy cover grouping had significantly higher values of average canopy density and average height ($\alpha = 0.05$, $P < 0.0001$) than the no human-caused disturbances and existing conditions groupings (Table 15). The existing conditions grouping, representing the existing conditions of the riparian canopy at the time of data collection had lower values of average height and significantly lower values of average canopy density ($\alpha = 0.05$, $P < 0.0007$) than the no human-caused disturbances grouping. However, there were instances where average canopy density and height values were higher than those for the no human-caused disturbances grouping when the stands with human-caused disturbances possessed average parameter values greater than those of the existing conditions grouping (the vegetation reach average). This situation was rare, but happened with one reach in the Crooked Fork subbasin for average canopy density, two reaches in the Lochsa River basin for average canopy density, and one reach in the Lochsa River basin for both average canopy density and average tree height (Table 15).

Table 15. Lochsa River Basin Measured Vegetation Values

Reach	Existing conditions	Average Canopy Density (%)				Existing conditions	Average Tree Height (m)			
		Human-caused fire damage stands only	Harvested stands only	Stands with no disturbances	Full potential canopy cover		Human-caused fire damage stands only	Harvested stands only	Stands with no disturbances	Full potential canopy cover
Crooked Fork										
149.2 to 143.7	50.5 (n=20)	--	--	50.5 (n=20)	63	24.2 (n=20)	--	--	24.2 (n=20)	23.3
143.7 to 131.8	58.8 (40)	--	--	58.8 (40)	63	24.7 (40)	--	--	24.7 (40)	23.3
131.8 to 127.0*	45.0 (2)	--	--	--	63	29.0 (2)	--	--	--	23.3
127.0 to 123.9	45.4 (11)	0.0 (n=1)	47.6 (n=7)	55.3 (3)	54	21.9 (11)	0.0 (1)	22.3 (7)	28.5 (3)	27.3
123.9 to 117.9	58.6 (24)	--	50.2 (6)	61.3 (18)	74	28.7 (24)	--	26.5 (6)	29.4 (18)	32.9
117.9 to 112.8	61.2 (9)	--	66.5 (2)	59.7 (7)	74	32.0 (9)	--	27.6 (2)	33.3 (7)	32.9
White Sand Creek										
136.1 to 129.2	49.9 (33)	--	--	49.9 (33)	71	24.5 (33)	--	--	24.5 (33)	29.3
129.2 to 120.0	46.6 (21)	--	--	46.6 (21)	55	20.8 (21)	--	--	20.8 (21)	26.9
120.0 to 117.5	59.2 (19)	--	--	59.2 (19)	54	22.6 (19)	--	--	22.6 (19)	28.1
117.5 to 112.8	75.5 (4)	--	73.0 (1)	76.3 (3)	54	28.7 (4)	--	21.9 (1)	30.9 (3)	28.1
Lochsa River										
112.8 to 103.0	65.4 (21)	--	43.5 (5)	72.0 (16)	75	27.4 (21)	--	23.3 (5)	28.7 (16)	30.7
103.0 to 93.3	49.9 (72)	52.8 (4)	51.9 (5)	49.5 (63)	75	23.0 (71)	31.6 (4)	19.6 (5)	22.8 (63)	30.7
93.3 to 75.6	55.3 (73)	66.0 (2)	29.8 (3)	57.9 (66)	75	22.0 (73)	29.3 (2)	13.9 (3)	22.8 (66)	30.7
75.6 to 38.8	49.1 (193)	29.4 (18)	--	48.2 (175)	67	20.5 (193)	15.7 (18)	--	21.1 (175)	27.0
38.8 to 30.9	39.8 (53)	0.0 (1)	--	42.1 (50)	67	18.2 (53)	0.0 (1)	--	19.2 (50)	27.0
30.9 to 25.4	37.2 (41)	12.0 (1)	--	41.4 (36)	67	17.2 (41)	6.7 (1)	--	19.2 (36)	27.0
25.4 to 16.3	40.0 (52)	17.7 (5)	--	39.8 (42)	67	19.0 (52)	15.4 (5)	--	21.5 (42)	27.0
16.3 to 15.0	33.8 (4)	0.0 (1)	--	45.0 (3)	67	17.9 (4)	0.0 (1)	--	23.8 (3)	26.8
11.7 to 15.0	47.8 (18)	13.7 (2)	--	53.8 (16)	67	24.2 (18)	12.3 (2)	--	26.3 (16)	26.8
0.0 to 11.7	44.1 (45)	--	--	44.1 (45)	67	21.9 (45)	--	--	21.9 (45)	26.8
Deadman Creek										
27.1 to 22.7	43.7 (17)	--	29.0 (7)	51.5 (10)	68	22.1 (17)	--	5.3 (7)	31.1 (10)	31.0
22.7 to 16.3	47.7 (32)	38.7 (3)	0.0 (1)	51.2 (28)	68	25.6 (32)	27.9 (3)	0.0 (1)	26.8 (28)	31.0
Canyon Creek										
29.9 to 21.4	53.5 (34)	36.0 (1)	48.6 (14)	59.1 (17)	68	22.2 (34)	5.6 (1)	11.1 (14)	31.4 (17)	31.0
21.4 to 11.7	57.2 (38)	24.0 (1)	28.7 (3)	59.2 (35)	68	32.6 (38)	2.0 (1)	10.5 (3)	34.4 (35)	31.0

* - This stand was burned in the 2000 Crooked Fire. Vegetation data collected prior to 2000 were used for this analysis.

In addition, the no human-caused disturbances grouping was broken down to “human-caused fire disturbances” and “harvest activities.” Some vegetation reaches contained both fire and harvest disturbances, several reaches had only one of the two human-caused disturbances, and some reaches had no human-caused disturbances. For example, of the four vegetation reaches that represent White Sand Creek, the three upstream reaches did not possess human-caused disturbances. For these vegetation reaches, the existing conditions data were equal to the no human-caused disturbances data.

Model Output

Generally, average water temperatures in the Lochsa River and its tributaries were lowest in the full potential canopy cover scenario and highest in the existing conditions scenario. For White Sand Creek, the existing conditions and no human-caused disturbances output were close to identical, as were the input data for the two scenarios (see discussion above). The output data are given in Table 16 and displayed in Figures 13, 14, and 15.

Discussion

Vegetation Data

The purpose of this study was to assess water temperature differences due to naturally occurring and human-caused disturbances of the riparian vegetation of the Lochsa River and four of its tributaries. The key to the study is the accuracy and level of detail of the collected vegetation data. These data were collected by the Clearwater National Forest and entered into the Forest Inventory database.

Historically, large fires have consumed much of the Lochsa River basin. Fires prior to 1910 are not well documented, and only the largest fires in the 20th Century are delineated by their boundaries (Figure 16). Pre- and post-fire stand data are not available for these fires. As such, there is no way of knowing which stands within the fire boundaries were burned, and at what intensity (Wulf 2002). Therefore, current parameters describing forest stands that have not been disturbed by humans are

categorized as “having no historical disturbances or natural disturbances only.” This assumes, as is generally believed, that the largest fires in the 20th Century were started by lightning strikes and not by human activities (Wulf 2002).

A paired t-test of the new vegetation data (Table 15) with the vegetation data from the previous study (Table 10) shows that the average canopy density parameter has significantly increased since the original data were collected ($\alpha = 0.05$, $P < 0.0001$). This is ostensibly due to tree growth. However, data collection and data management may play a part in the changes in average values for an entire stand.

A sizeable fire occurred in the Crooked Fork basin in the summer of 2000, known as the Crooked Fire. The fire engulfed portions of the Haskell Creek, Rock Creek, and Crooked Fork drainages (Figure 17) and completely burned nearly every stand within its boundaries. On the Crooked Fork, the fire was contained entirely within one vegetation reach, RKM 131.8-127.0. For this reach, the vegetation data for the previous study was used for the existing conditions scenario because the previous vegetation data better describes the forest conditions for this reach during the modeling periods, July and August of 1994, 1997 and 1998. The no human-caused disturbances scenario was not run for the affected reach.

Figure 18 shows typical vegetation data, used as input for the shade files, in this case for the downstream vegetation reach of Canyon Creek, RKM 21.4 to 11.7. In this reach, the average canopy density is less than that of the full potential canopy cover and stands that have no human-caused disturbances. The average value is decreased by the low canopy density values in the harvested stands and the stands disturbed by human-caused fires. This is also the case for average tree height, except that the value for the no human-caused disturbances average is higher than that of the full potential. There are several possible explanations for this. First, the “full potential” value is actually the 80th percentile for the

Table 16. Predicted Water Temperatures at Selected Locations in Lochsa River Basin

Model	Stream	River KM	Average Temperature Model (°C)			Maximum Temperature Model (°C)		
			Existing Conditions	No Human-Caused Disturbances	Full potential canopy cover	Existing Conditions	No Human-Caused Disturbances	Full potential canopy cover
1994 (low flow)	Crooked Fork	117.9	10.99	10.91	10.44	12.42	12.20	10.88
	White Sand Creek	112.8	14.04	14.00	13.66	16.37	16.16	15.95
	Deadman Creek	16.3	14.38	14.06	12.84	16.83	16.26	13.75
	Canyon Creek	11.7	13.57	13.42	12.98	14.80	14.55	13.62
	Lochsa River	78.4	15.70	15.64	14.70	18.06	17.94	16.03
	Lochsa River	42.3	17.53	17.49	16.25	19.96	19.90	17.92
	Lochsa River	0.0	18.88	18.83	17.54	20.81	20.75	18.79
1997 (high flow)	Crooked Fork	112.8	10.46	10.43	10.25	11.79	11.66	10.87
	White Sand Creek	112.8	13.10	13.08	12.88	15.33	15.17	15.09
	Deadman Creek	16.3	14.35	14.19	13.64	16.72	16.36	14.86
	Canyon Creek	11.7	13.09	12.98	12.67	14.63	14.43	13.70
	Lochsa River	78.4	14.07	14.03	13.45	16.05	15.97	14.64
	Lochsa River	42.3	15.71	15.67	14.88	17.73	17.69	16.33
	Lochsa River	0.0	16.92	16.88	16.07	18.43	18.39	17.11
1998 (average flow)	Crooked Fork	112.8	11.78	11.74	11.51	13.22	13.07	12.18
	White Sand Creek	112.8	14.91	14.88	14.58	17.53	17.33	17.17
	Deadman Creek	16.3	15.04	14.86	14.24	17.39	17.01	15.43
	Canyon Creek	11.7	13.59	13.51	13.28	14.85	14.69	14.11
	Lochsa River	78.4	16.24	16.19	15.48	18.44	18.35	16.82
	Lochsa River	42.3	18.12	18.08	17.13	20.34	20.30	18.74
	Lochsa River	0.0	19.28	19.24	18.28	20.99	20.95	19.47

Figure 13. 1994 Average Predicted Water Temperatures in the Lochsa River

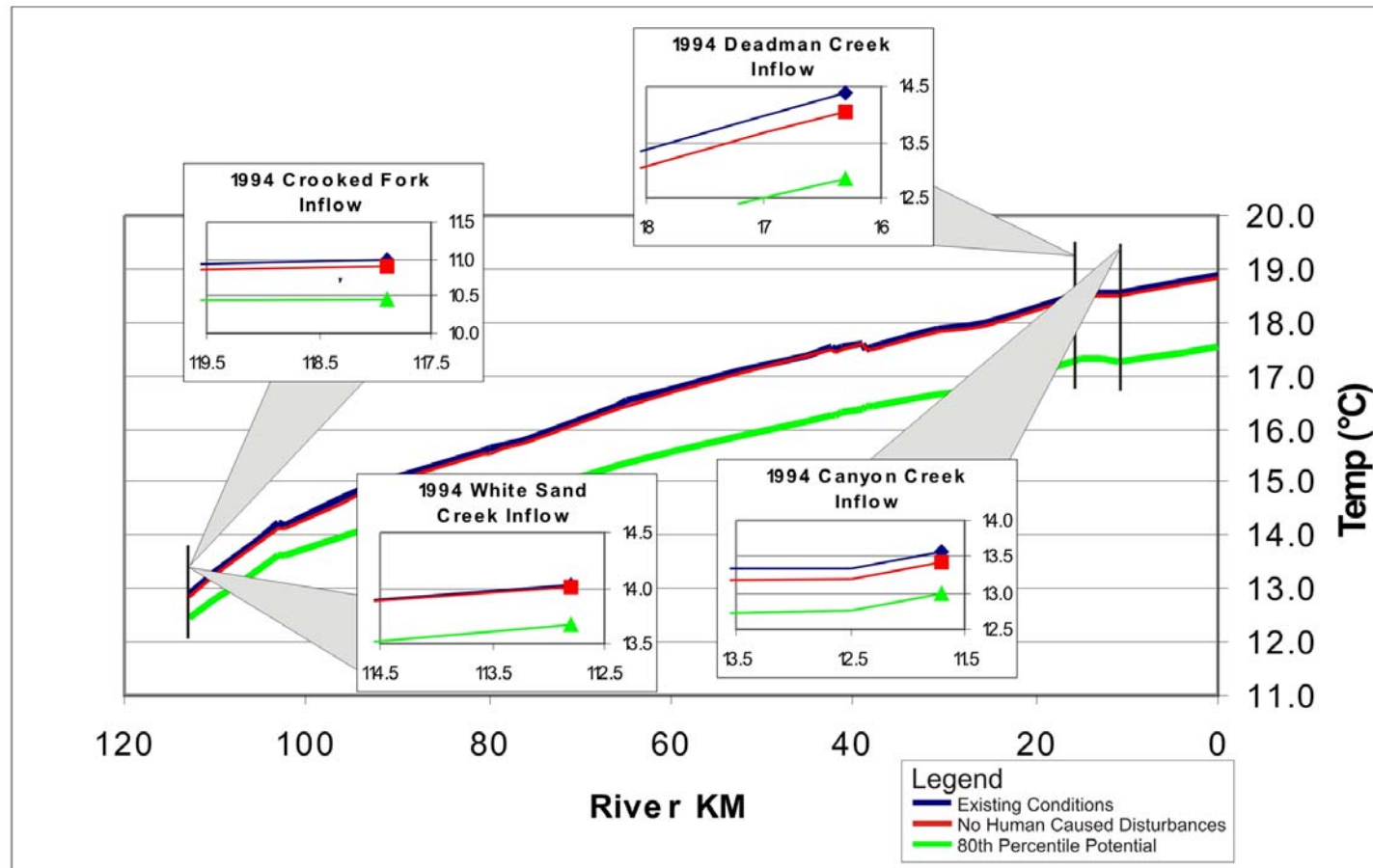


Figure 14. 1997 Average Predicted Water Temperatures in the Lochsa River

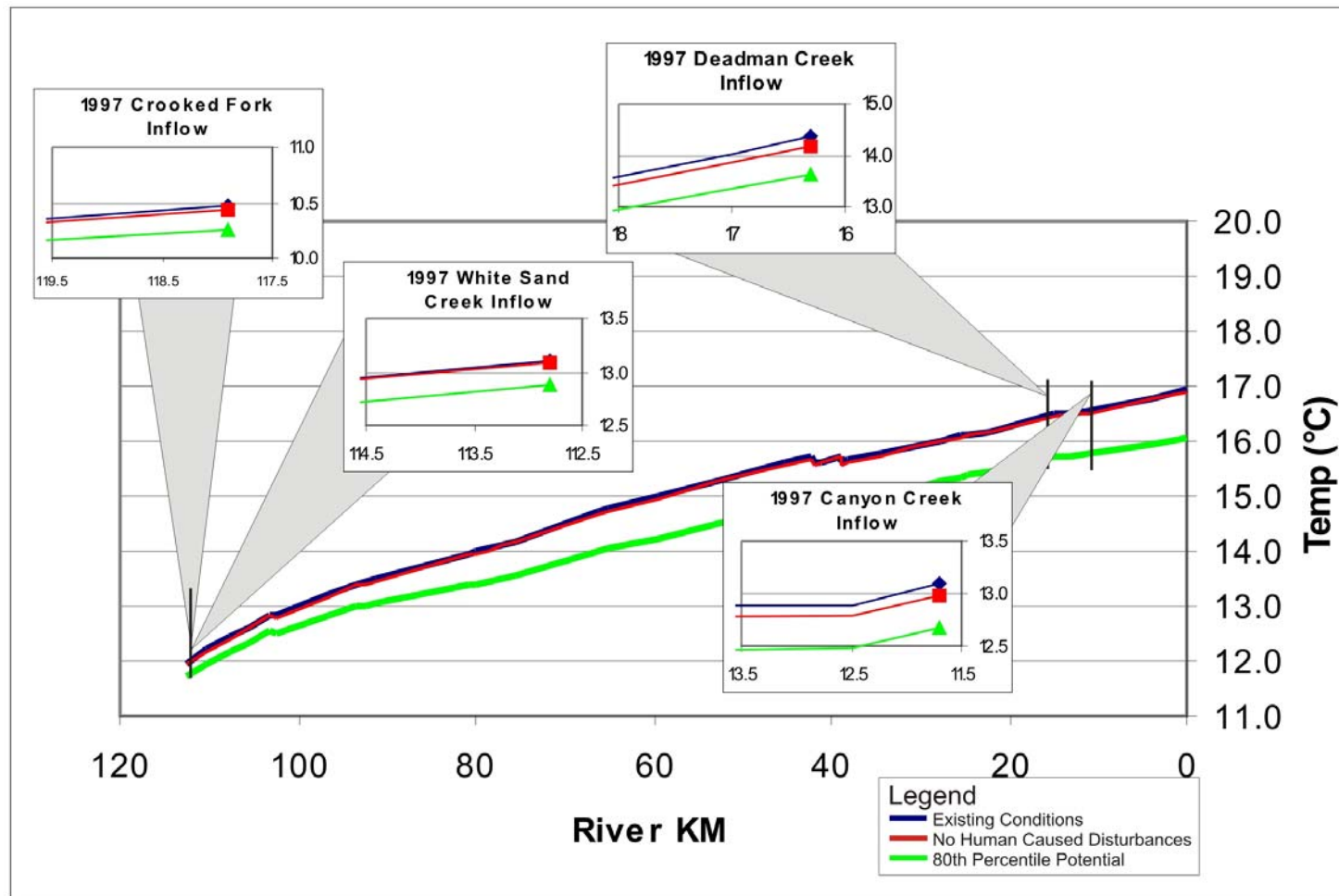


Figure 15. 1998 Average Predicted Water Temperatures in the Lochsa River

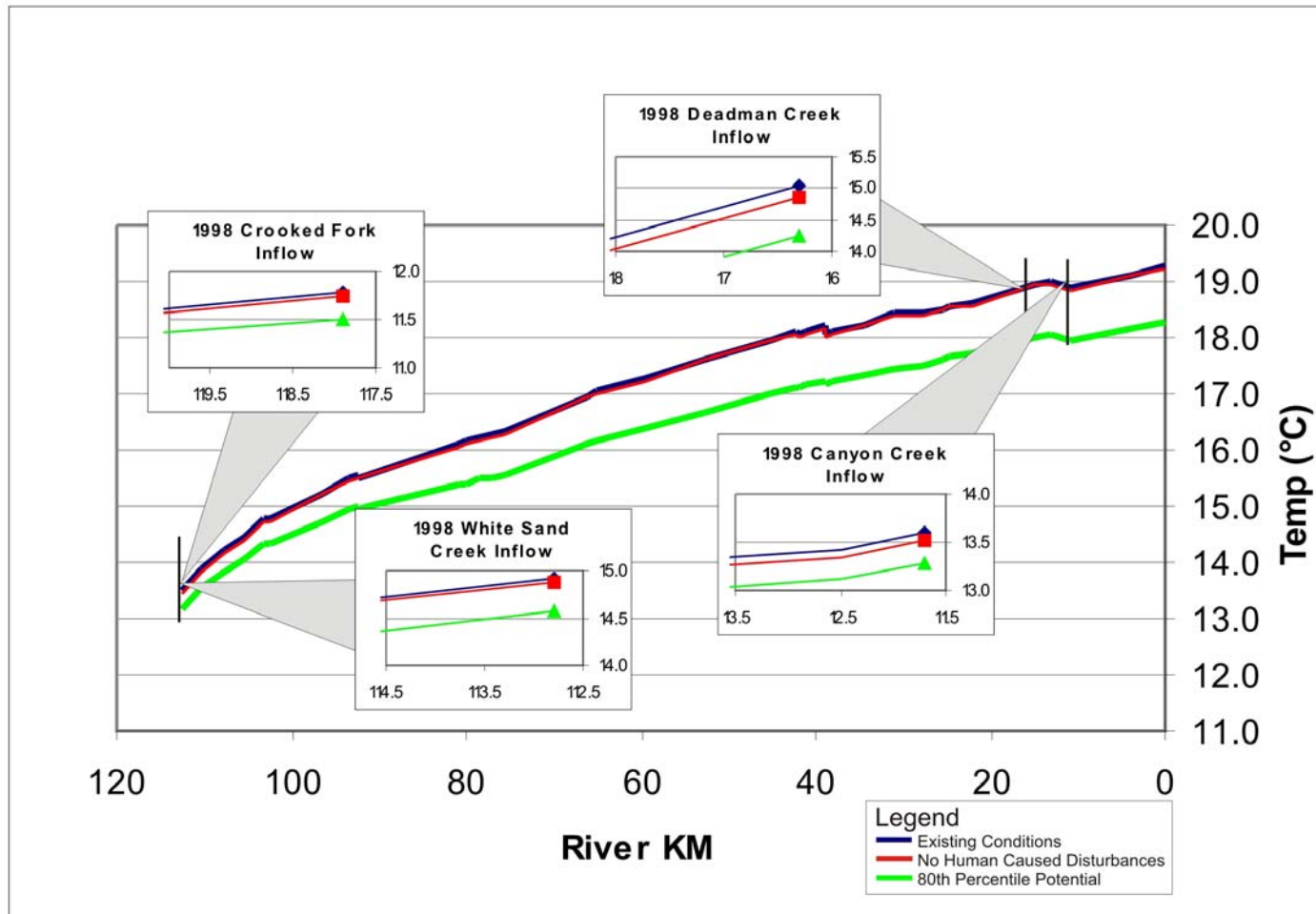


Figure 16. Boundaries of Historical Fires in the Lochsa River Basin

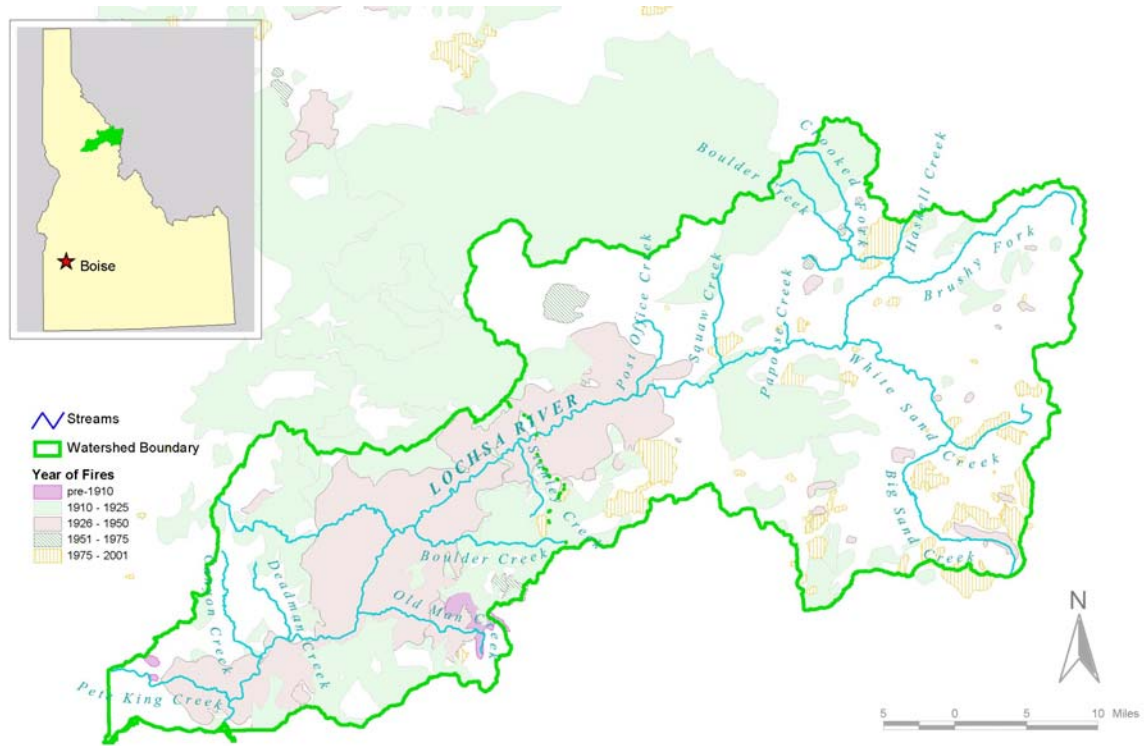
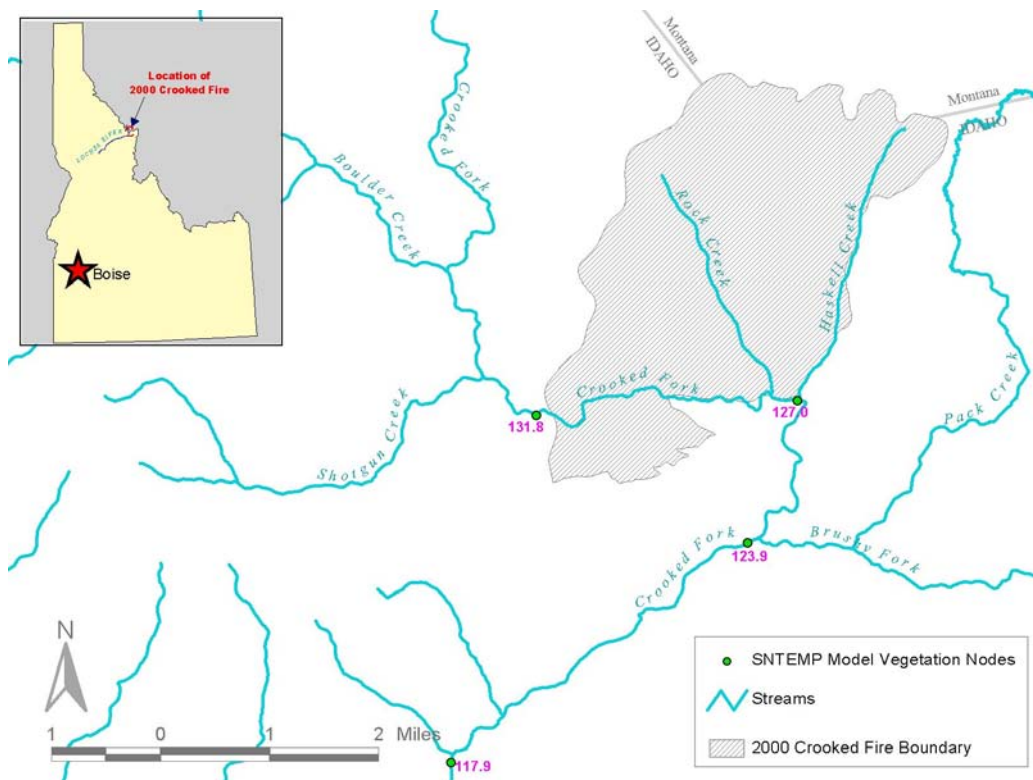


Figure 17. Boundaries of the 2000 Crooked Fire



dominant habitat type of a large local sample of stands. The tree heights in this vegetation reach may exist in the 85th percentile, for example, of the same sample. Another explanation could be that the full potential value represents the dominant habitat type (and the corresponding range of species) for that area, while the reach values include all habitat types. The different habitat types present in the reach can increase or decrease the average reach values of canopy density and tree height relative to the full potential values of the dominant habitat type.

Undisturbed stands generally possessed much higher values of canopy density and tree height than stands with human-caused disturbances (Figure 19). However, the difference in average canopy density and average tree height between undisturbed stands and the existing condition was much less distinct for most vegetation segments. For the Lochsa River, differences in these parameters varied significantly from upstream to downstream based on t-tests ($\alpha = 0.05$, $P < 0.03$ for both parameters). There were a few segments with existing conditions values slightly greater than those with no human-caused disturbances for average canopy density (Figure 19, three of 10 reaches) and average tree height (Figure 20, one of 10 reaches). The values of these parameters for both scenarios never reached those of the full potential canopy cover scenario for the Lochsa River. Average values for both parameters generally decreased in the downstream direction, then trended upwards again near the vicinity of the confluence with Deadman Creek.

Model Output

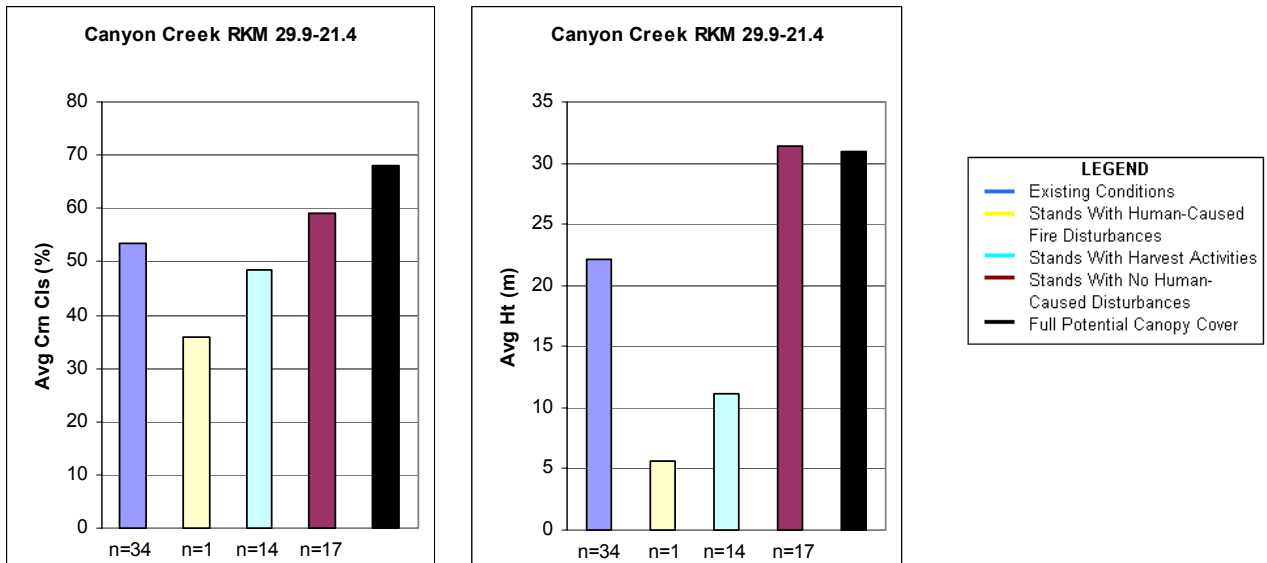
Riparian canopy conditions play a major role in water temperatures in the Lochsa River basin, as shown in the original study. In most vegetation reaches, full potential canopy cover possessed higher values of average density and average tree height than both the existing conditions and the conditions with no human-caused disturbances. There were a few exceptions to this, located in the uppermost reaches of Crooked Fork and White Sand

Creek and the lower reach of Canyon Creek, but none on the Lochsa mainstem. The result was that water temperatures throughout the Lochsa River basin were lower for the full potential canopy cover model than for the existing conditions and the no human-caused disturbances models. The departure was greater at the mouth of the Lochsa River, where there was an average temperature difference of 1.34°C between the existing conditions and the full potential canopy cover models in July and August of the low flow year of 1994, than upstream in the system, where average temperature differences were 1.00°C, 0.55°C, and 0.37°C at the Mocus Point Packbridge on the Lochsa River, the mouth of Crooked Fork, and the mouth of White Sand Creek, respectively, for the same modeling period (Table 16 and Figure 21).

The difference in water temperatures between the existing conditions and no human-caused disturbances models was much less than between the existing conditions and full potential canopy cover models. The temperature difference was almost zero at the mouth of White Sand Creek because there are very few human-caused disturbances in the White Sand Creek subbasin. There were more disturbances elsewhere in the Lochsa River basin, and predicted temperature differences were more apparent in these locations. In July and August of the low flow year of 1994, for example, the average temperature differences were 0.32°C, 0.08°C, and 0.06°C at the mouth of Deadman Creek, the mouth of Crooked Fork, and at both the Mocus Point Packbridge and the mouth of the Lochsa River, respectively (Table 16 and Figure 21).

Based on the above analysis, natural disturbances accounted for 96.3%, 95.3%, and 96.0% of the departure of existing water temperatures from the full potential canopy cover at the mouth of the Lochsa River, and human-caused disturbances accounted for the remainder during the low flow year of 1994, the high flow year of 1997, and the average flow year of 1998, respectively (Table 17). The percentages of maximum temperature

Figure 18. Measured Vegetation Parameters in Canyon Creek, RKM 29.9-21.4



departure due to human-caused disturbances for White Sand Creek are relatively high because the maximum temperature difference between the existing conditions and the full potential conditions for White Sand Creek are relatively small. As such, the small departure in temperature as a result of the few human-caused disturbances in the basin calculate as a large percentage.

Based on t-tests of the 1994, 1997, and 1998 models, human-caused disturbances factored more upstream in the system and in the modeled tributaries ($\alpha = 0.05$, $P < 0.010$, $P < 0.021$, $P < 0.017$). Under existing conditions, the mouth of White Sand Creek exhibits maximum water temperatures near that of the full potential canopy cover scenario (Table 16). Although maximum water temperatures as a result of human-caused disturbances contributes a relatively large percentage of the deviation from full potential canopy cover temperature conditions, the overall deviation in water temperature is small, ranging from 0.16°C to 0.21°C.

A reason that the water temperatures of the existing conditions of the Lochsa subbasin

were so much greater than those of the full potential canopy cover scenario, and relatively close to those of the no human-caused disturbances scenario, is that there are relatively few stands in riparian zone of the Lochsa River (and its tributaries) that have been disturbed by human causes. Of the 876 riparian stands used in this analysis, 94 were disturbed by human causes. The remaining 782 stands were subject to natural conditions. Only three of these 782 stands exhibited obvious disturbances due to natural causes. However, this does not take into account possibility that the undisturbed riparian stands were subject to unseen natural stresses that were not apparent in the collected data.

While the water temperatures of the existing condition and no human-caused disturbance models differ greatly than those of the full potential canopy cover model, there is little difference in water temperatures between the existing condition and the no human-caused disturbance models. However, the mechanism for the differences is exactly the same. Increased canopy cover, in the form of

Figure 19. Average Canopy Density in Riparian Vegetation Reaches of Lochsa River

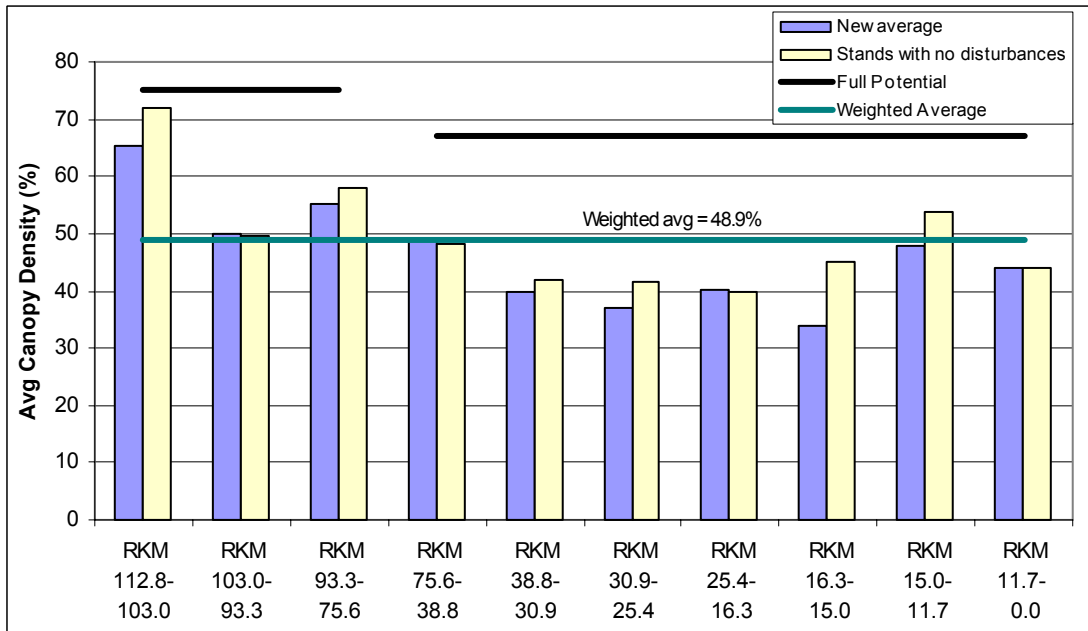


Figure 20. Average Tree Height in Vegetation Reaches of Lochsa River

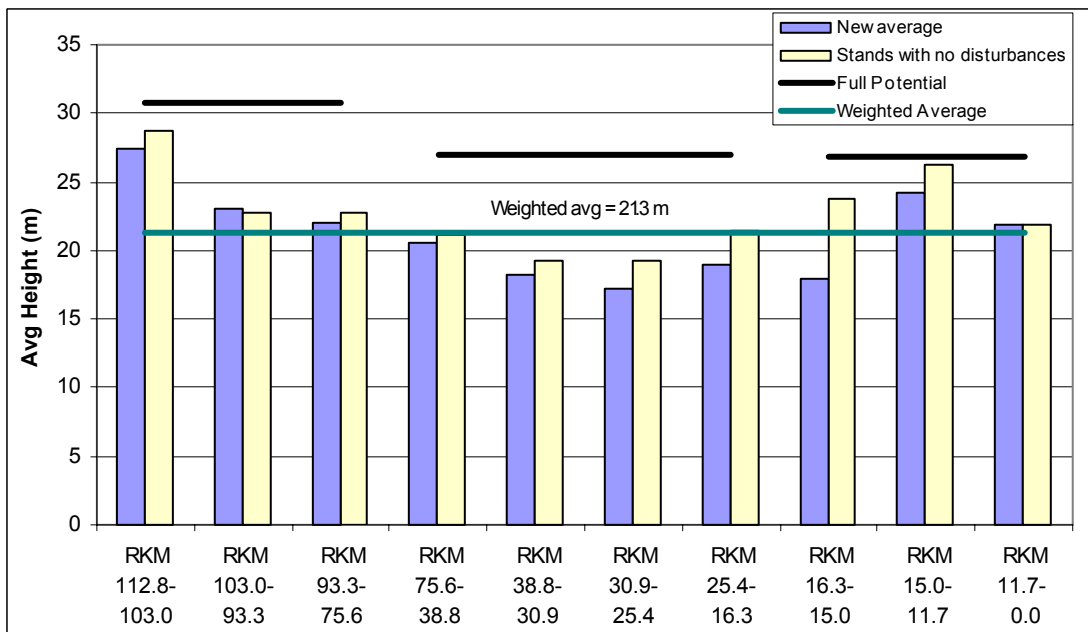


Figure 21. Predicted Water Temperatures at Selected Locations in Lochsa River Basin

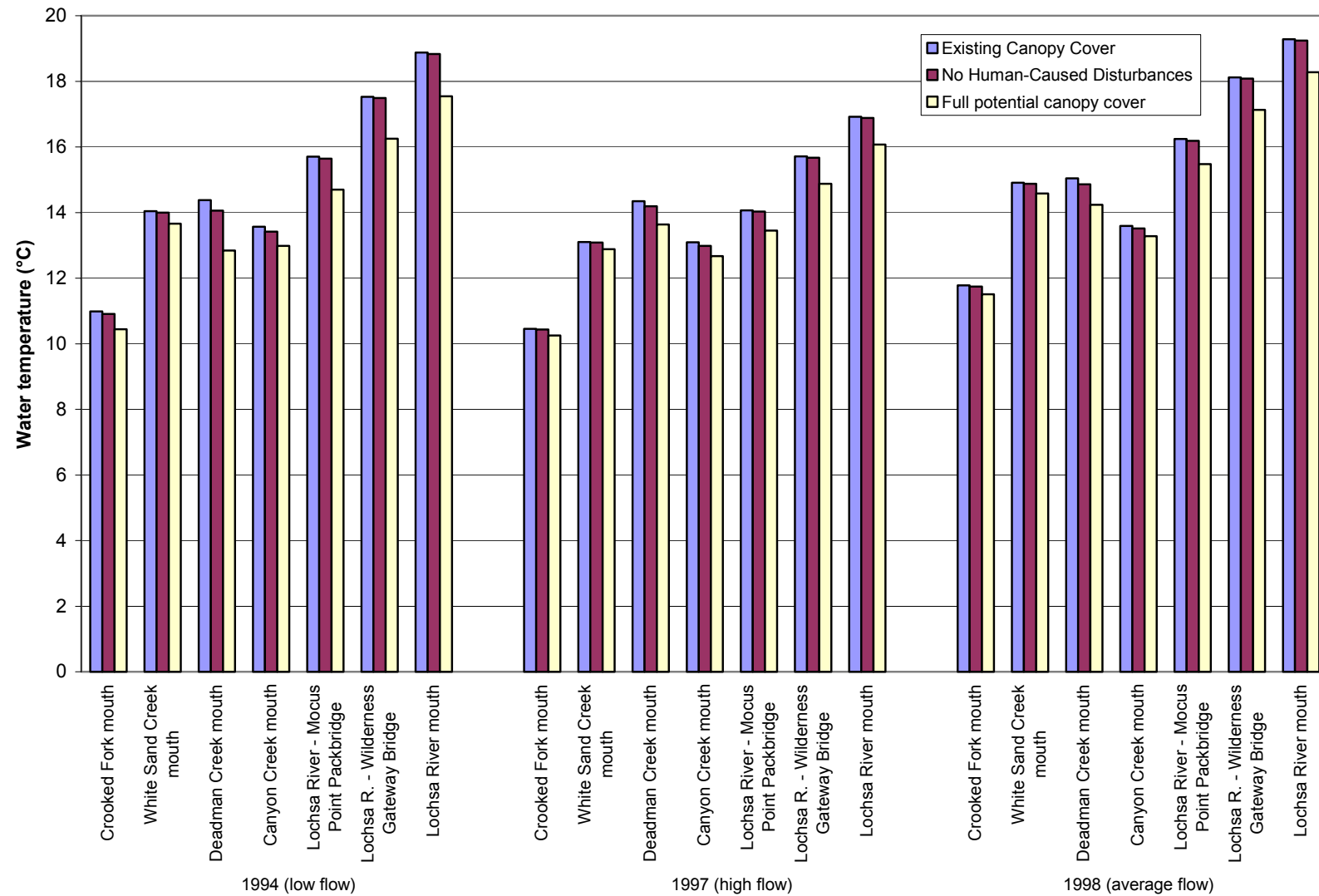


Table 17. Fraction of Temperature Departure From Full Potential Canopy Cover Model Due To Natural or Human-Caused Disturbances

Model	Stream	River KM	Average Temperature Model (°C)		Maximum Temperature Model (°C)	
			Due to natural disturbances	Due to human-caused disturbances	Due to natural disturbances	Due to human-caused disturbances
1994 (low flow)	Crooked Fork	117.9	85.5%	14.5%	85.7%	14.3%
	White Sand Creek	112.8	89.5%	10.5%	50.0%	50.0%
	Deadman Creek	16.3	79.2%	20.8%	81.5%	18.5%
	Canyon Creek	11.7	74.6%	25.4%	78.8%	21.2%
	Lochsa River	78.4	94.0%	6.0%	94.1%	5.9%
	Lochsa River	42.3	96.9%	3.1%	97.1%	2.9%
	Lochsa River	0.0	96.3%	3.7%	97.0%	3.0%
1997 (high flow)	Crooked Fork	112.8	85.7%	14.3%	85.9%	14.1%
	White Sand Creek	112.8	90.9%	9.1%	33.3%	66.7%
	Deadman Creek	16.3	77.5%	22.5%	80.6%	19.4%
	Canyon Creek	11.7	73.8%	26.2%	78.5%	21.5%
	Lochsa River	78.4	93.5%	6.5%	94.3%	5.7%
	Lochsa River	42.3	95.2%	4.8%	97.1%	2.9%
	Lochsa River	0.0	95.3%	4.7%	97.0%	3.0%
1998 (average flow)	Crooked Fork	112.8	85.2%	14.8%	85.6%	14.4%
	White Sand Creek	112.8	90.9%	9.1%	44.4%	55.6%
	Deadman Creek	16.3	77.5%	22.5%	80.6%	19.4%
	Canyon Creek	11.7	74.2%	25.8%	78.4%	21.6%
	Lochsa River	78.4	93.4%	6.6%	94.4%	5.6%
	Lochsa River	42.3	96.0%	4.0%	97.5%	2.5%
	Lochsa River	0.0	96.0%	4.0%	97.4%	2.6%

increased tree height and canopy density, blocks a fraction of incoming solar radiation to the water surface that would otherwise convert its energy to heat and contribute to increased water temperatures. Predicted maximum temperatures responded similarly to predicted average temperatures. Maximum water temperature model output is given in Table 16.

One aspect of this study that may have contributed to possible inaccuracies is that 2001 vegetation data was used with 1994, 1997 and 1998 meteorological and water temperature data in the models. While the stands remained relatively unchanged between 1994 and 2001, save for the vegetation reach burned in the 2000 Crooked Fire, undoubtedly some growth was measured as increases in average tree height and average canopy density (crown closure) between the old and new data. This growth may account for slightly lower predicted water temperatures in the modeled streams. The new models were not recalibrated to account for the new vegetation data. As tree growth is likely to be relatively uniform throughout the Lochsa River basin, the growth would not affect the conclusions of the study.

Conclusion

This goal of this study was to find what fraction of the departure between current canopy conditions and full potential canopy cover in the riparian zone was due to natural disturbances, and what fraction was due to human disturbances. It was found that between 75% and 97% of the difference in water temperature between the existing and full potential canopy cover conditions in the Lochsa River basin is due to natural disturbances. While human-caused disturbances increase water temperatures in the basin, natural disturbances are a more dominant factor in the difference between existing condition and full potential canopy cover water temperatures.

The influence of human-caused disturbances on average temperatures is most apparent in Deadman and Canyon Creeks, and least

apparent in the mainstem Lochsa River. In White Sand Creek, existing condition average and maximum water temperatures were close to those for the full potential condition because there were few stands with observed human-caused disturbances and no stands with observed natural disturbances.

The disparity in the departures of water temperature values between the existing conditions and the maximum potential canopy cover scenarios, and the existing conditions and the no human-caused disturbances scenarios, provides a glimpse into the mechanism of the riparian zone in the Lochsa River basin. While human-caused disturbances decrease the average canopy densities and tree heights of the stands they affect, and thereby increase the water temperature of the stream they are adjacent to, only 10.7% of the stands in the Lochsa basin had been subject to human-caused disturbances. In contrast, all of the stands were subject to naturally occurring physical and biological processes, including snow, wind, rain, fire, disease, insects, extreme heat and cold, temperature fluctuations, over- and under-exposure to sunlight. These natural factors, as well as undocumented fires prior to 1910 and the poorly documented fires in the early 20th Century, have served to keep average stand values of canopy density and tree height below the maximum potential values. These factors, in turn, led to the majority of the departures in water temperature between existing conditions and the full potential canopy cover scenario. While the departure in average water temperature due to human-caused disturbances is discernable in all but the White Sand Creek subbasin, the reduction in canopy cover due to natural factors is apparently the driving force in higher water temperatures in the Lochsa River basin.

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Summary of Charateristics for Watersheds Identified as *a priori* Natural

Stream Name	Total Watershed Acreage	Wilderness Acres	Wilderness % of watershed	Roadless Acres	Roadless % of watershed	Roadless + Wild % of watershed	Timber Harvest Acres	% of watershed harvested	Ag Use Acres	Road miles
Boulder Creek	29,999	27,441	91.5	2,518	8.4	99.9	0	0.0%	0	0
Fish Creek	56,303	0	0.0	54,183	96.2	96.2	0	0.0%	0	32
Holly Creek	58,674	217	0.4	54,840	93.5	93.8	99	0.2%	0	36
Storm Creek	32,602	27,938	85.7	4,428	13.6	99.3	0	0.0%	0	3
Lochsa River*	755,738	235,879	31.2	331,880	43.9	75.1	17985	2.4%	0	786
Bear Creek	115,097	115,034	99.9	0	0.0	99.9	0	0.0%	0	0
Moose Creek	232,959	232,819	99.9	77	0.0	100.0	0	0.0%	0	0
Running Creek	58,082	28,460	49.0	29,582	51.0	100.0	0	0.0%	0	11
Selway River**	1,285,598	976,749	76.0	251,000	19.5	95.5	8913	0.7%	0	362
Selway R II***	1,147,721	964,440	84.0	176,281	15.4	99.4	1085	0.1%	0	146
Big Creek	381,134	340,418	89.3	27,398	7.2	96.5	0	0.0%	0	104
Indian Creek	53,229	53,135	99.8	3	0.0	99.8	0	0.0%	0	5
MF Salmon River #	1,838,789	1,450,368	78.9	261,472	14.2	93.1	1630	0.1%	727	628
Smithie Fork	28,268	0	0.0	15,747	55.7	55.7	65	0.2%	99	37

* all of 4th Field HUC 17060303

** all of 4th field HUCs 17060301 & 17060302

*** Everything draining to the confluence of Meadow Creek (all of 17060301 & most of 17060302)

all of 4th field HUCs 17060205 & 17060206

NOTES:

Timber harvest acres is total by USFS since harvest began over 50 years ago.

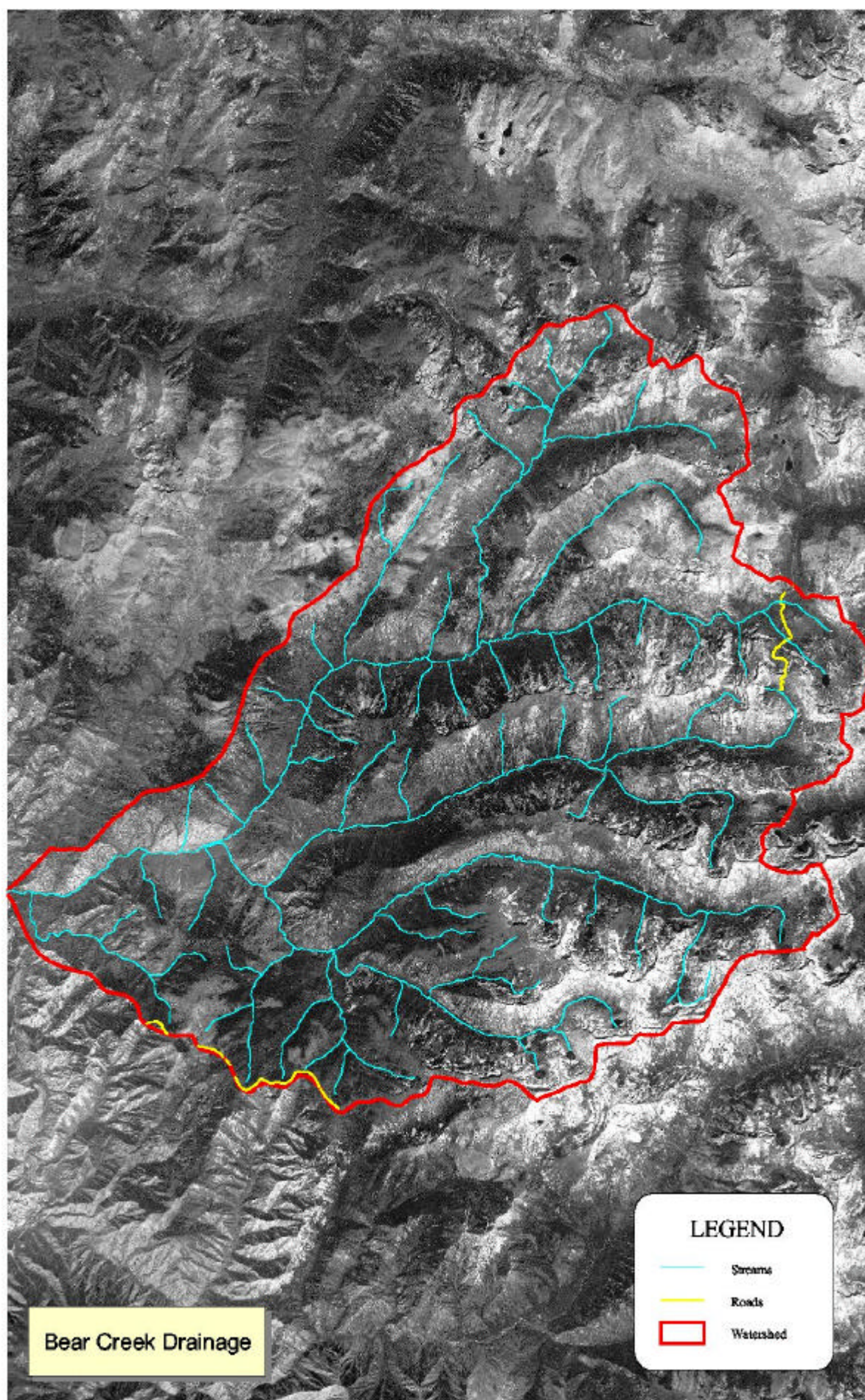
In the Lochsa this does not include harvest on intermingled private land, which brings the precent acres harvested to about 8%

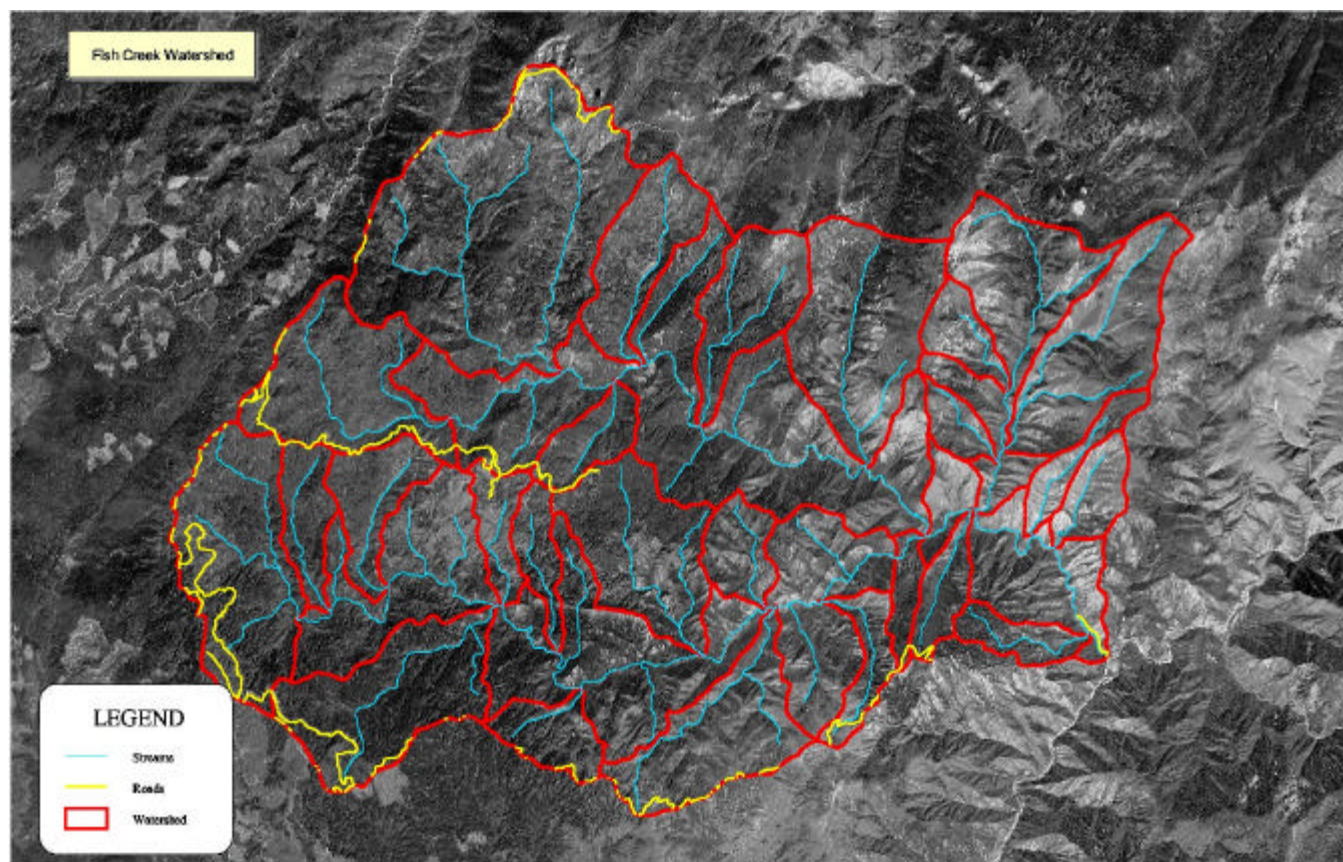
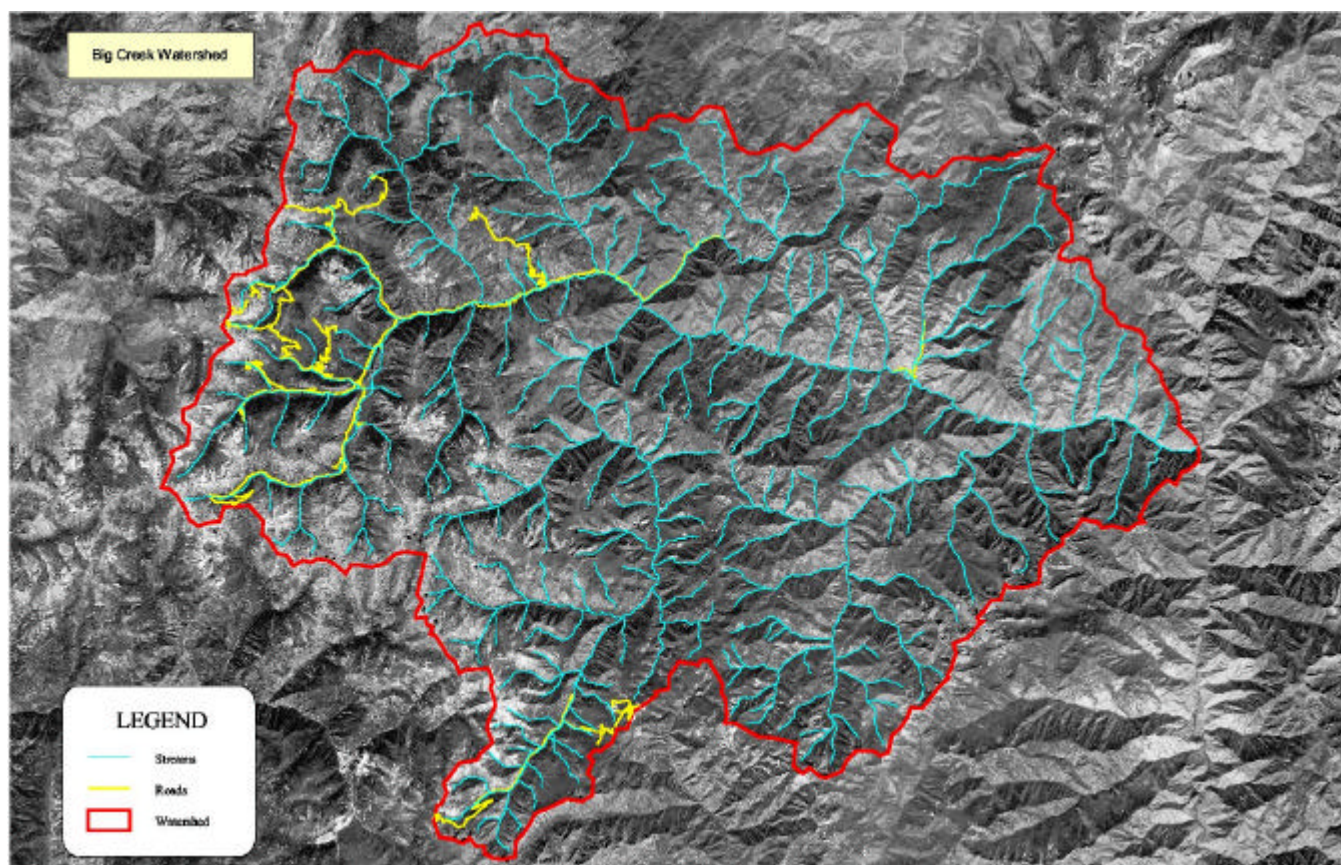
Forest Service reports no timber harvest in Riparian Habitat Conservation Areas (300ft stream buffer) in the MF Salmon and Selway drainages

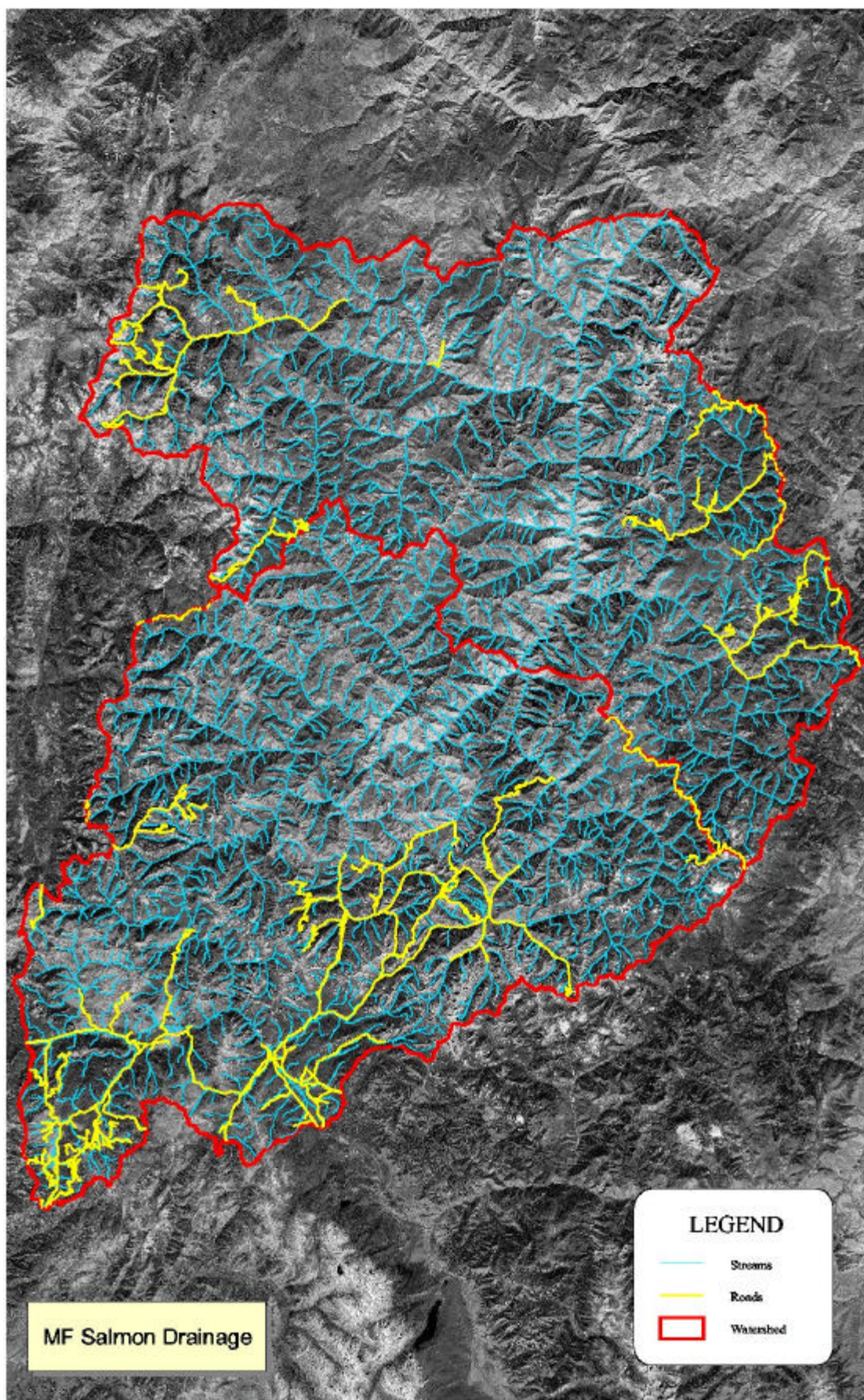
Ag use is primarily hay meadows on private inholdings

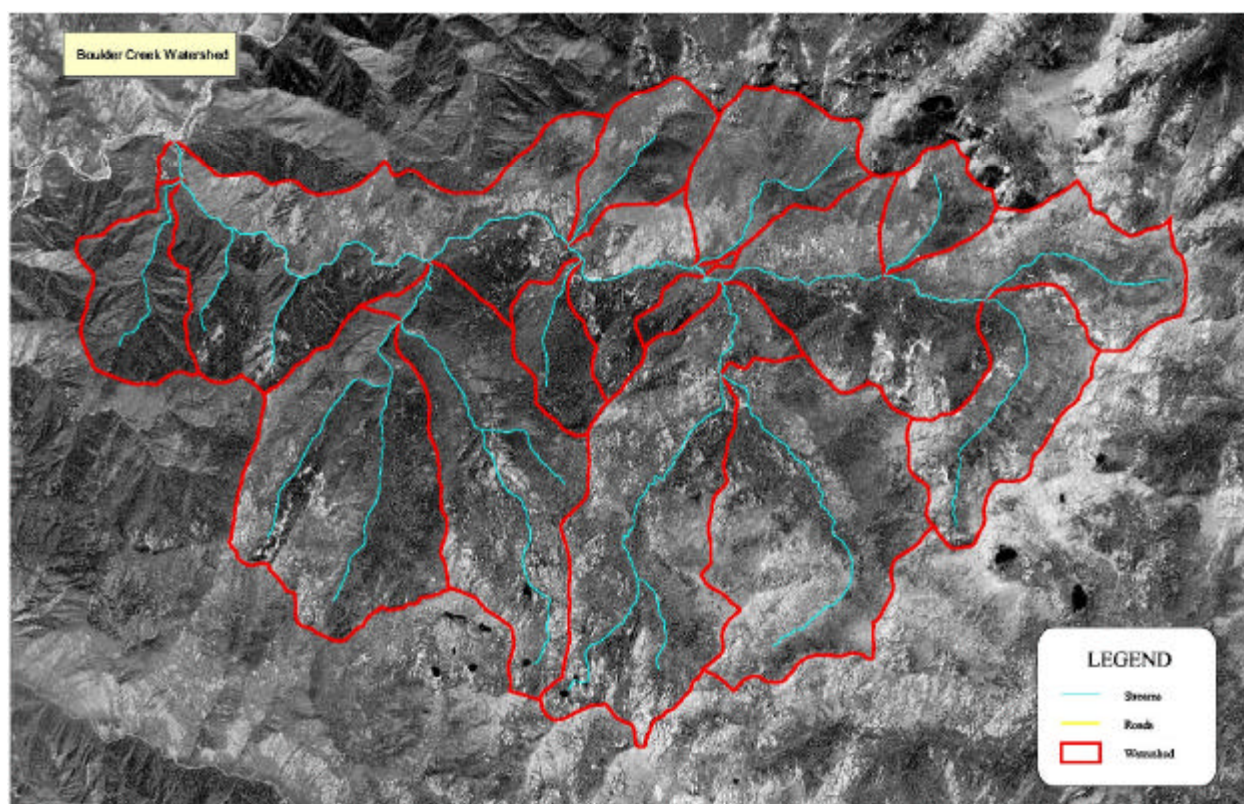
Calculation of RHCA acres in roads uses a 30' roadbed width and assumes entire road is within buffer

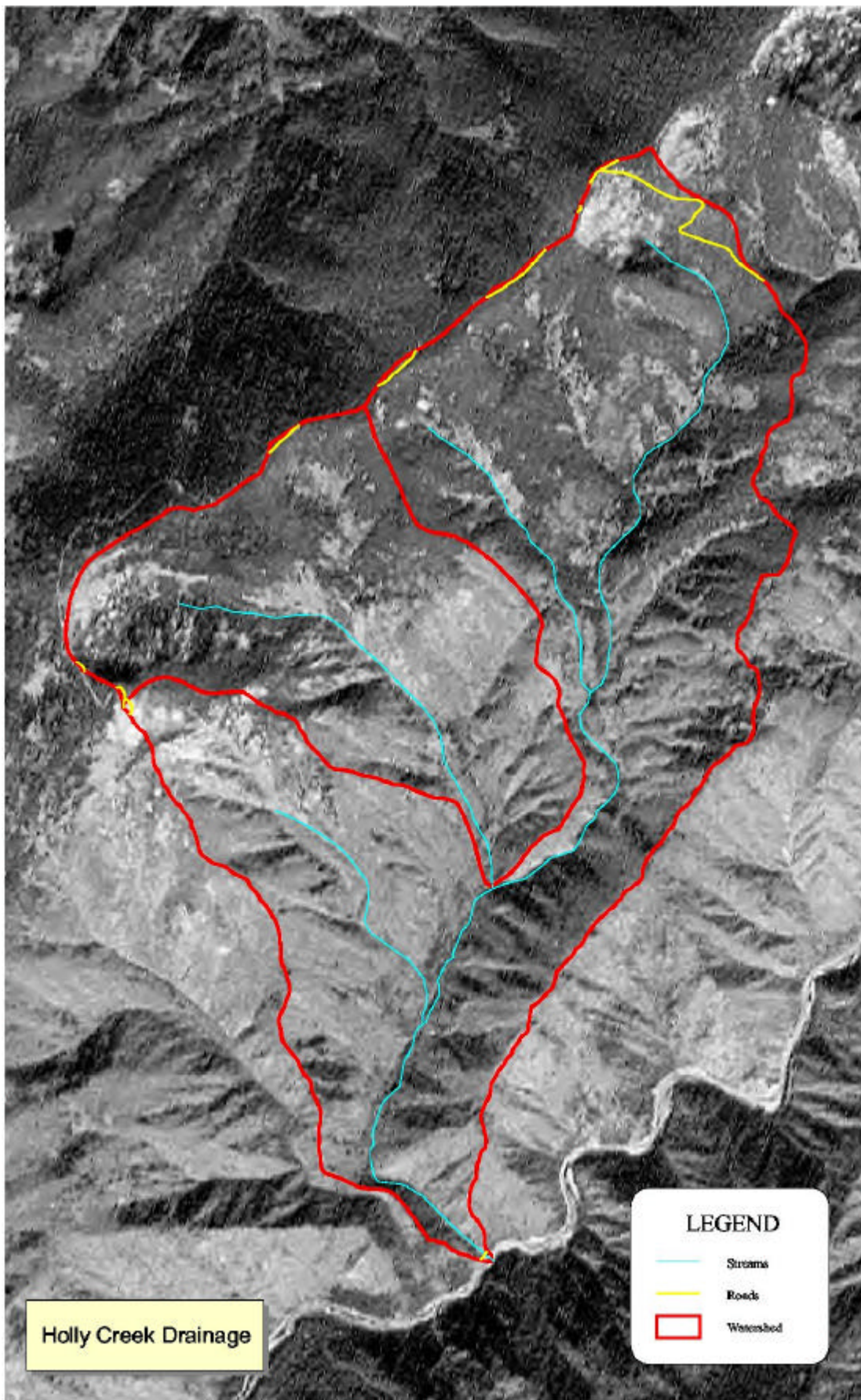
Road density mi/sq mi	Miles of 1:100K stream	Stream crossings	Stream xings per stream mi	Riparian Roads Miles (300ft)	% of RHCA in roads	Riparian Roads Miles (150ft)	% of RHCA in roads		# of Hot Springs	# of Dams
0.0	50	0	0.00	0	0.0%	0.0	0.0%		1	0
0.4	131	2	0.02	1	0.1%	0.6	0.0%		0	0
0.4	86	13	0.15	15	0.9%	1.0	0.1%		0	0
0.1	47	0	0.00	0	0.0%	0.0	0.0%		0	0
0.7	1377	229	0.17	169	0.6%	48.3	0.4%		7	0
0.0	183	0	0.00	0	0.0%	0.0	0.0%		0	0
0.0	434	0	0.00	1	0.0%	0.2	0.0%		1	0
0.1	120	6	0.05	2	0.1%	0.7	0.1%		1	0
0.2	2542	118	0.05	69	0.1%	23.2	0.1%		4	0
0.1	2270	73	0.03	45	0.1%	16.0	0.1%		4	0
0.2	650	55	0.08	41	0.3%	15.2	0.2%		0	0
0.1	106	0	0.00	0	0.0%	0.0	0.0%		2	0
0.2	3554	340	0.10	213	0.3%	77.7	0.2%		18	0
0.8	18	6	0.33	5	1.3%	0.8	0.4%		0	0

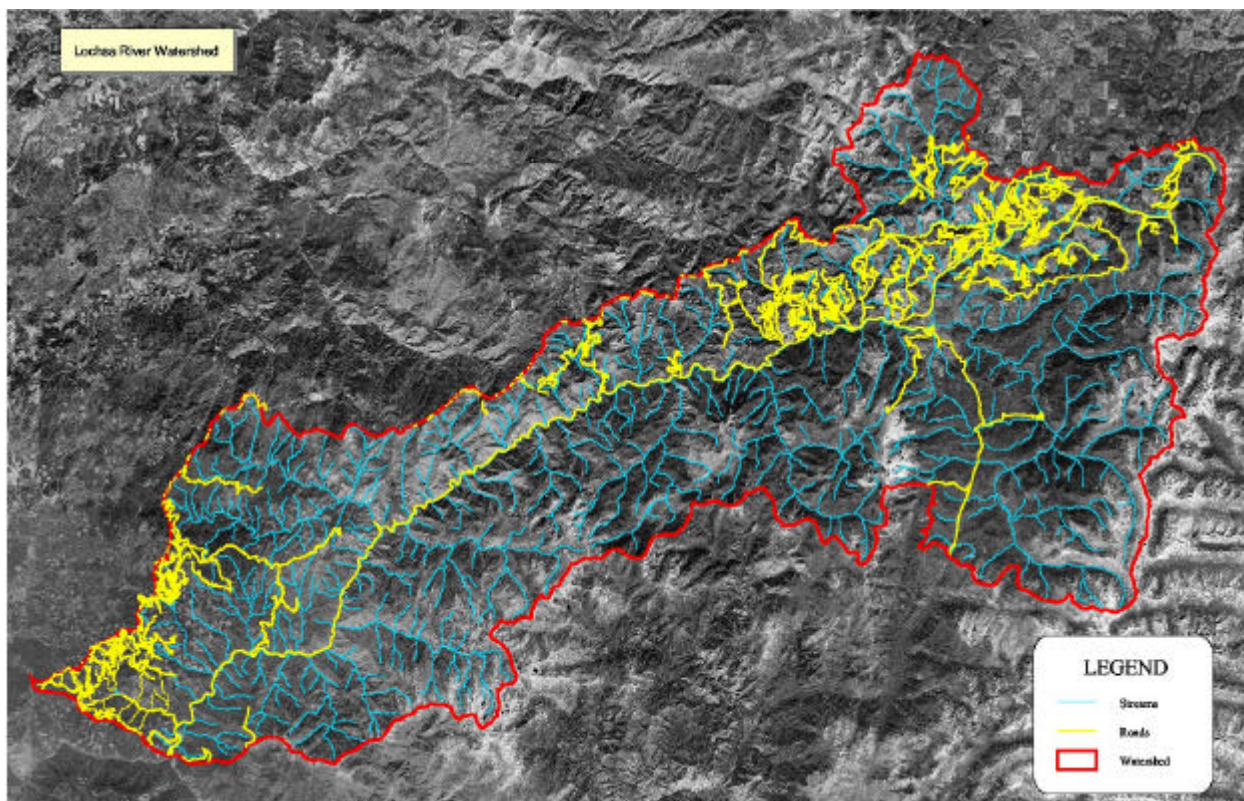
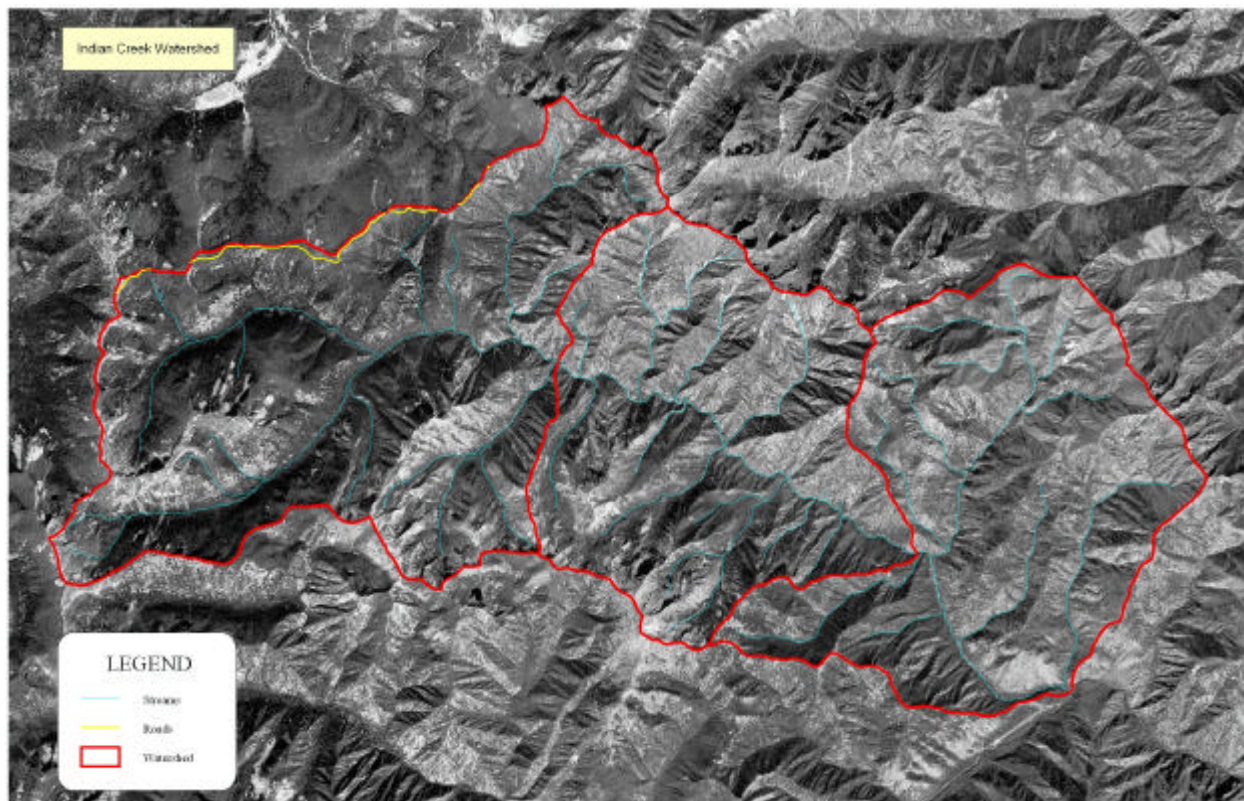


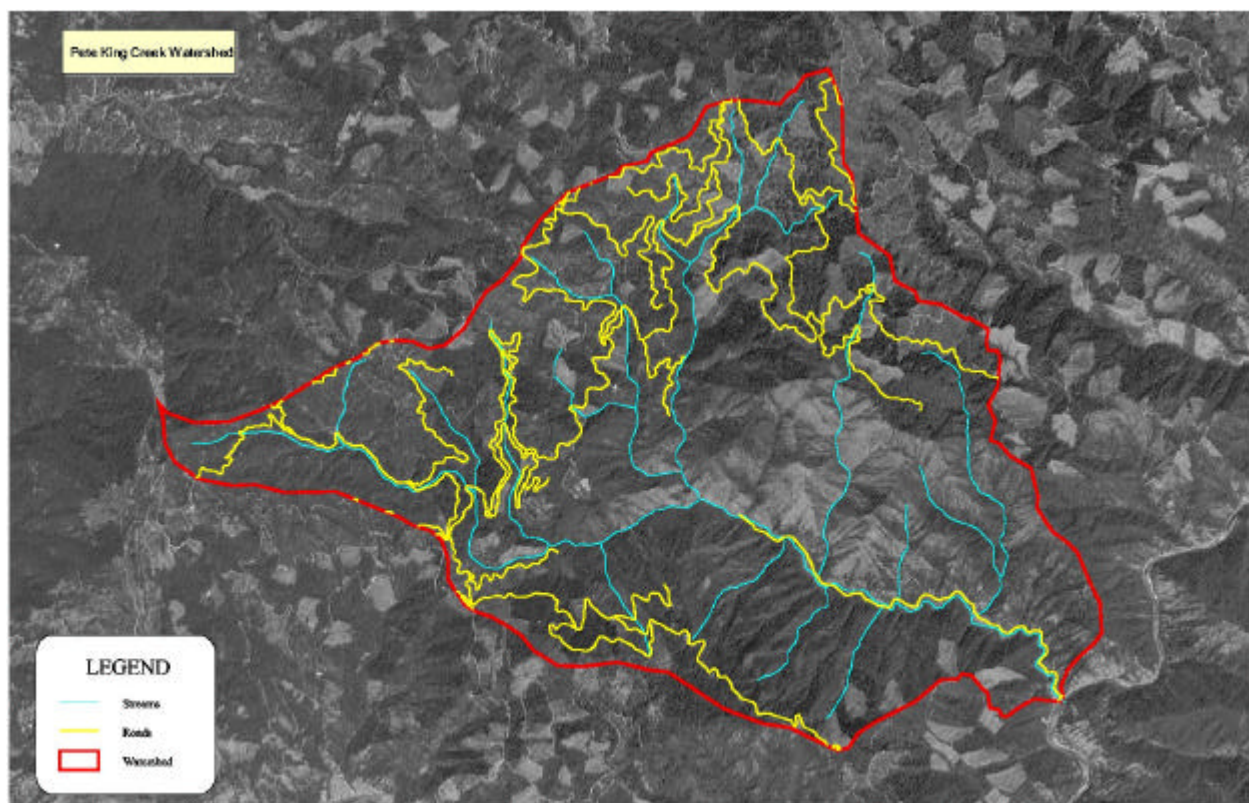
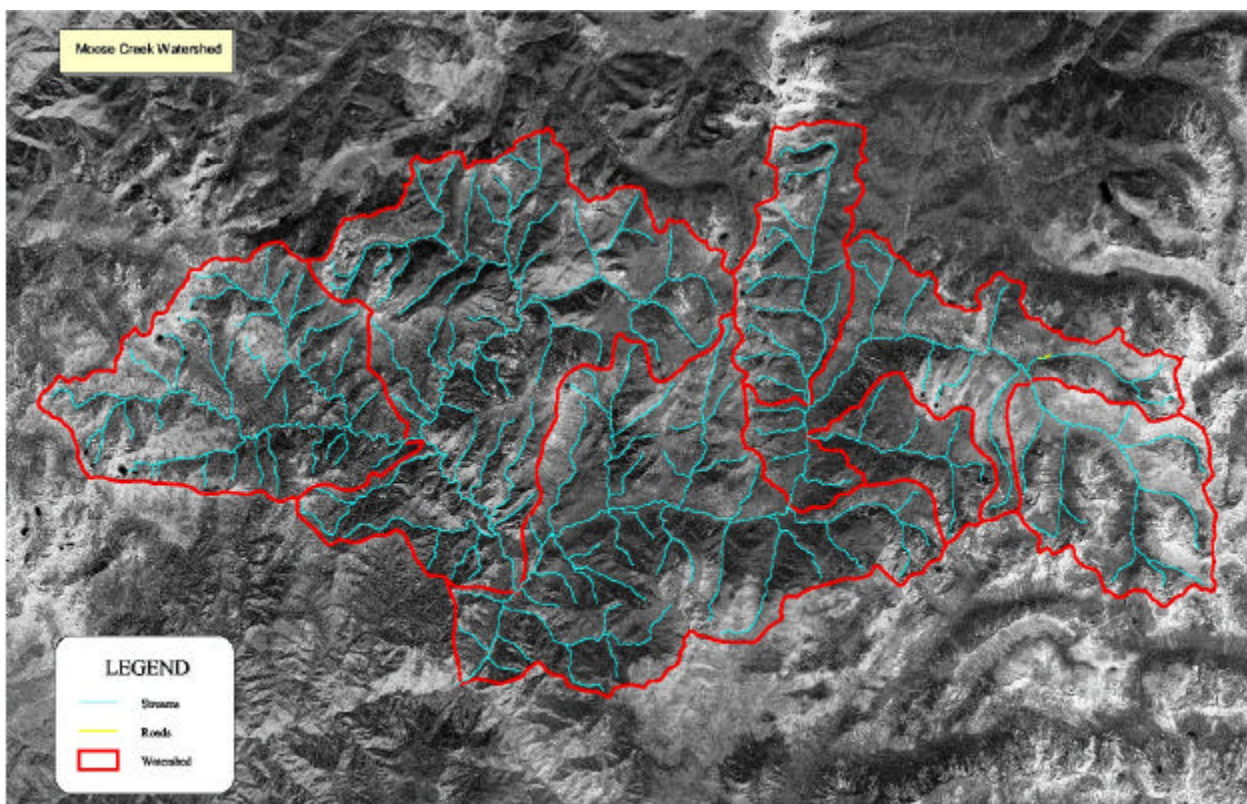


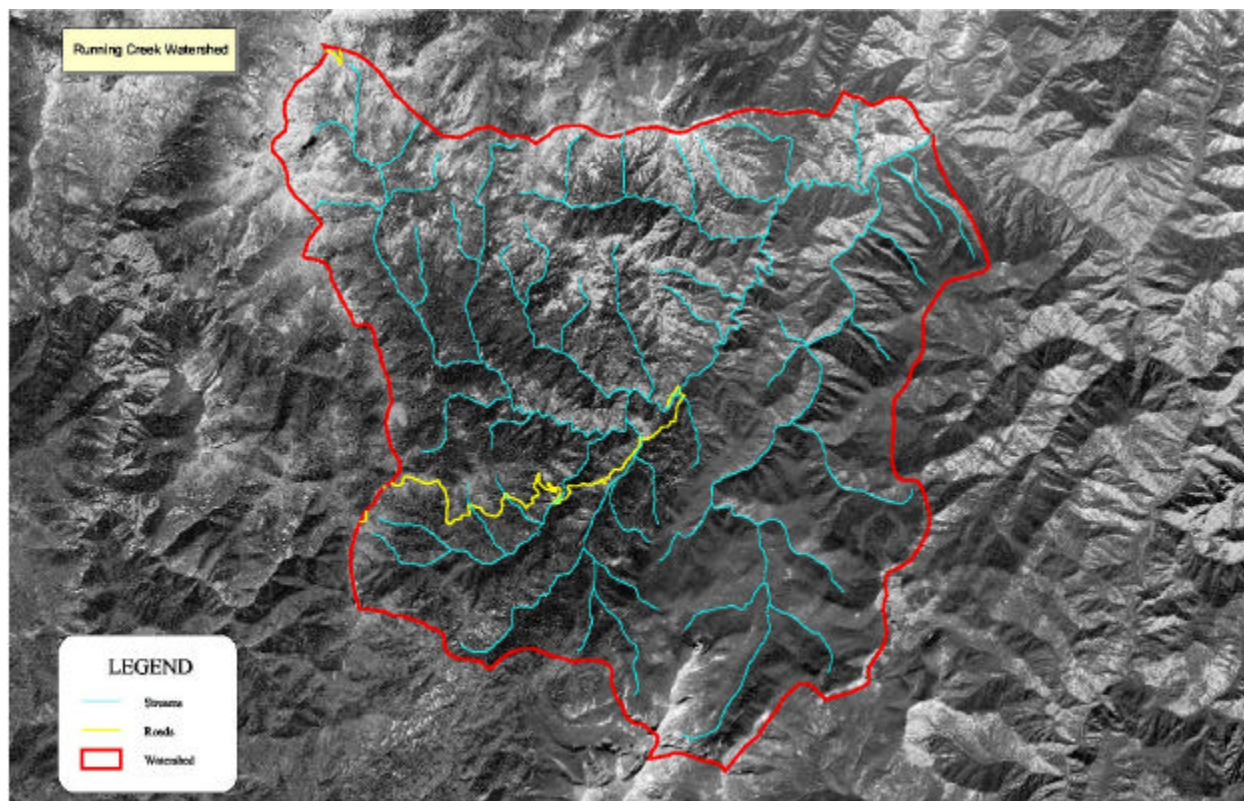


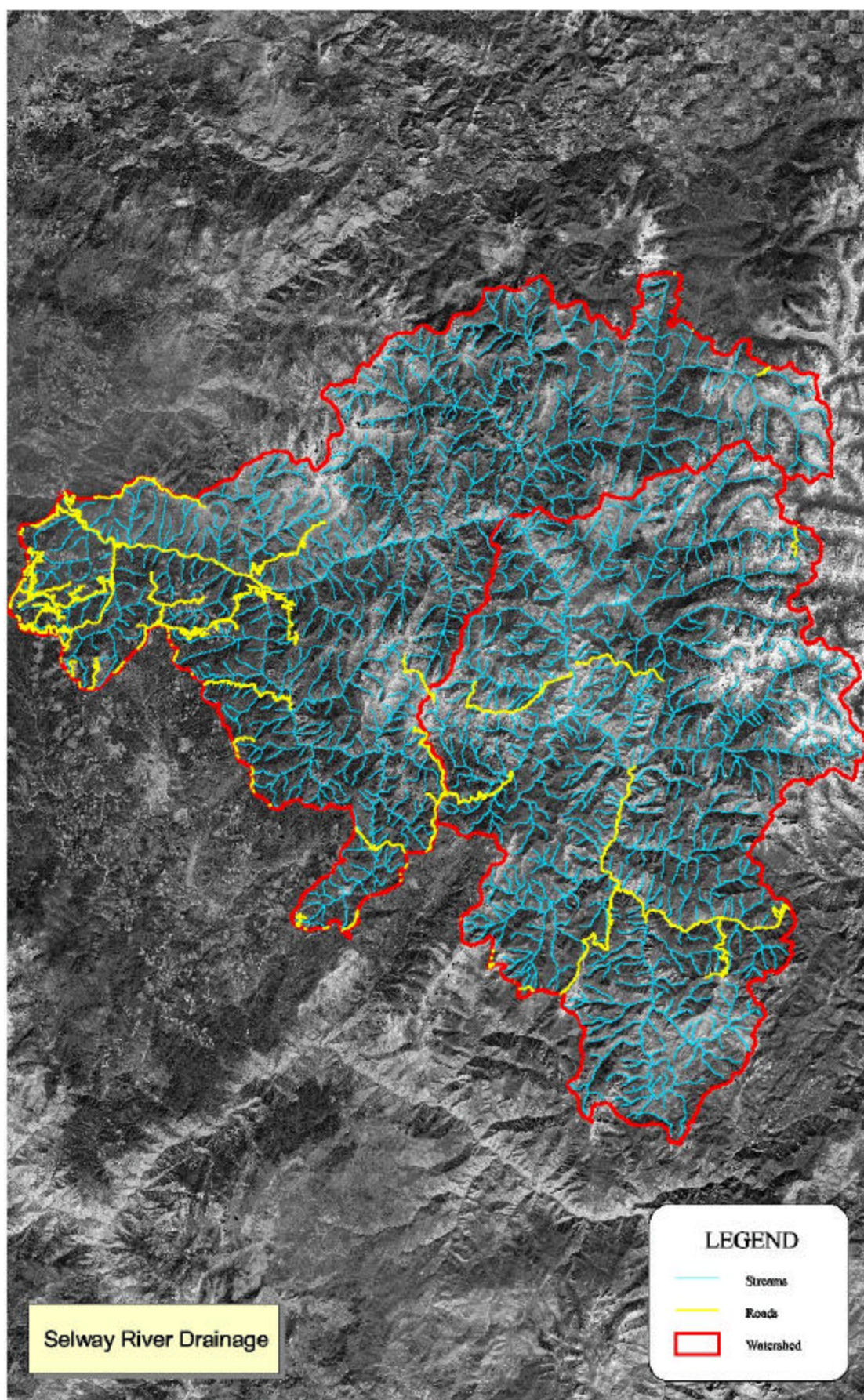


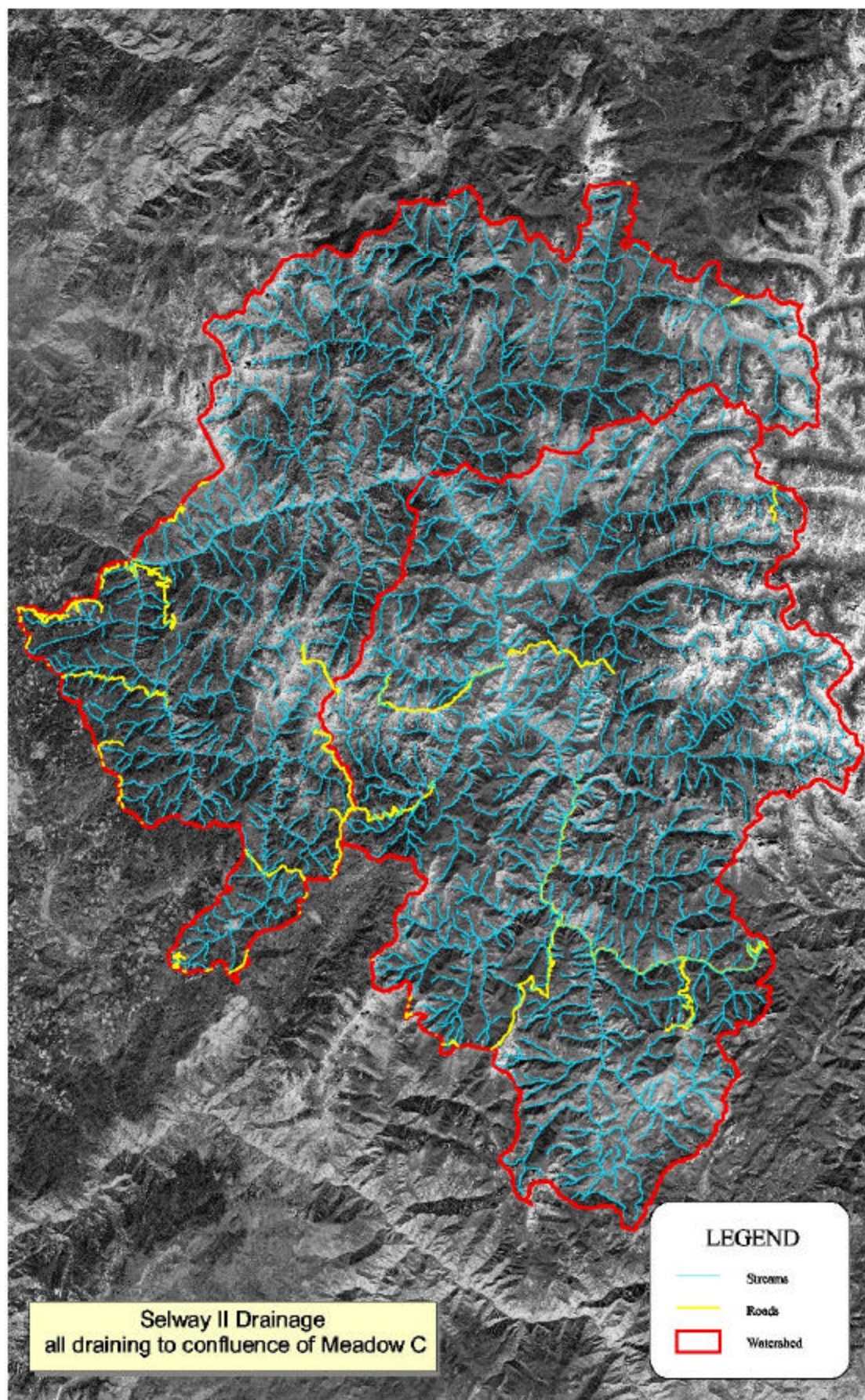


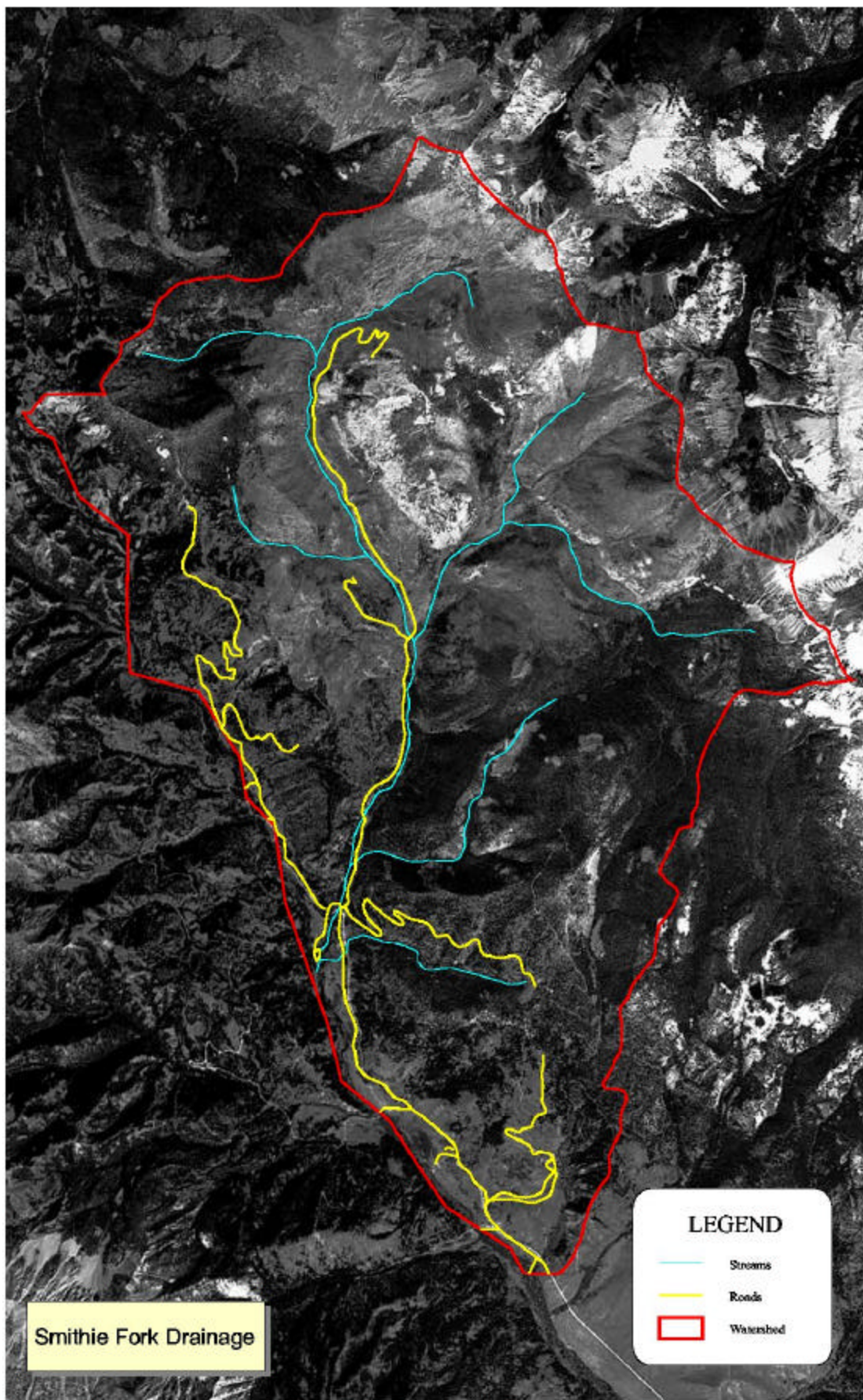


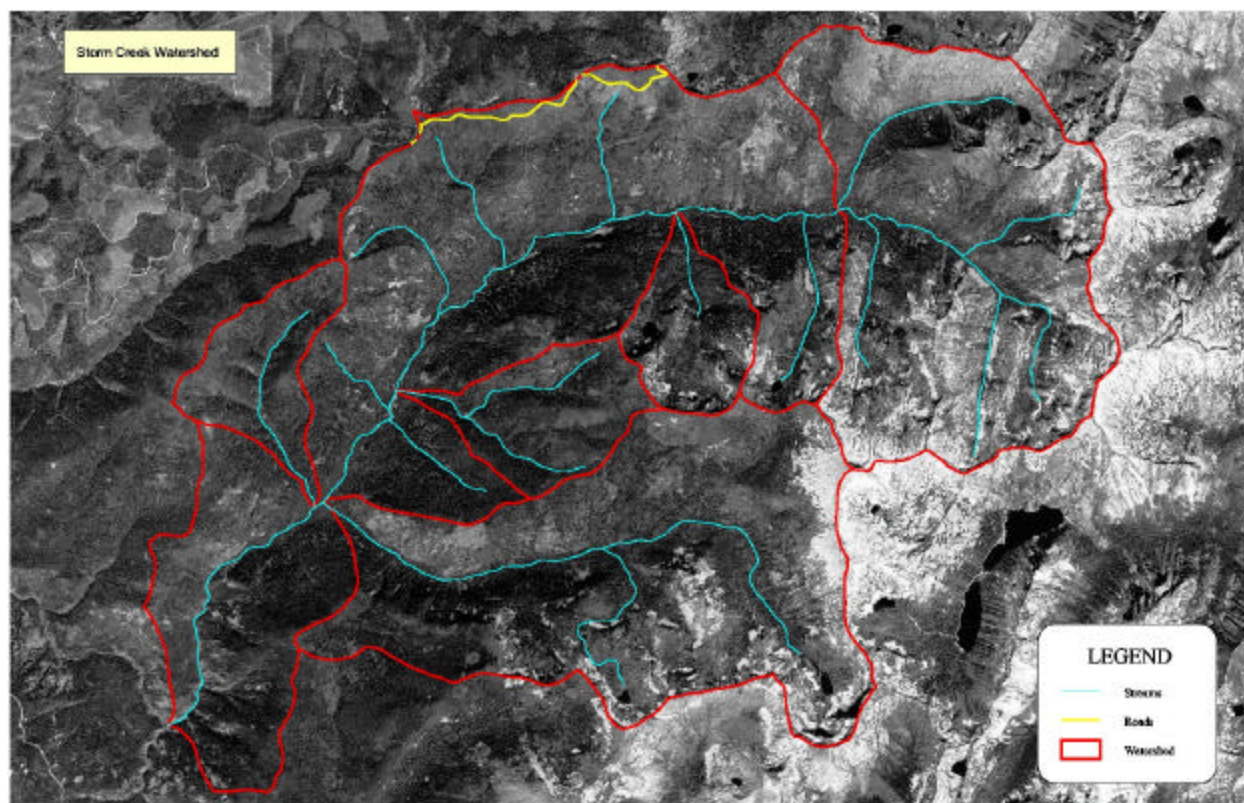












DEQ Summary of Temperature Data

Data Source: DEQ
Water Body: Bear Creek
Data Collection Site: near mouth
Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301
HUC4 Name: Upper Selway
North of the Salmon Clearwater Divide
Idaho Bull Trout Elevation: 767 M
Waterbody ID Number: 47

Import File : ... wAway\Selway 2001\Bear Creek 2001-00ed.txt
Calibration Factor : 0.07

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S-spawn	Nbr of Msrmts per day	7-Day Average of High
1	1-Jan-01	1.12	0.48	0.92		20	
2	2-Jan-01	0.32	0.00	0.02		20	
3	3-Jan-01	0.16	0.00	0.01		20	
4	4-Jan-01	0.64	0.00	0.22		20	
5	5-Jan-01	0.80	0.32	0.58		20	
6	6-Jan-01	0.64	0.00	0.26		20	
7	7-Jan-01	0.00	0.00	0.00		20	0.53
8	8-Jan-01	0.00	0.00	0.00		20	0.37
9	9-Jan-01	0.00	0.00	0.00		20	0.32
10	10-Jan-01	0.00	0.00	0.00		20	0.30
11	11-Jan-01	0.00	0.00	0.00		20	0.21
12	12-Jan-01	0.00	0.00	0.00		20	0.09
13	13-Jan-01	0.00	0.00	0.00		20	0.00
14	14-Jan-01	0.00	0.00	0.00		20	0.00
15	15-Jan-01	0.00	0.00	0.00		20	0.00
16	16-Jan-01	0.00	0.00	0.00		20	0.00
17	17-Jan-01	0.00	0.00	0.00		20	0.00
18	18-Jan-01	0.00	0.00	0.00		20	0.00
19	19-Jan-01	0.00	0.00	0.00		20	0.00
20	20-Jan-01	0.00	0.00	0.00		20	0.00
21	21-Jan-01	0.00	0.00	0.00		20	0.00
22	22-Jan-01	0.80	0.00	0.26		20	0.11
23	23-Jan-01	0.80	0.16	0.62		20	0.23
24	24-Jan-01	0.16	0.00	0.01		20	0.25
25	25-Jan-01	0.48	0.00	0.09		20	0.32
26	26-Jan-01	0.80	0.16	0.53		20	0.43
27	27-Jan-01	0.16	0.00	0.01		20	0.46
28	28-Jan-01	0.00	0.00	0.00		20	0.46
29	29-Jan-01	0.00	0.00	0.00		20	0.34
30	30-Jan-01	0.00	0.00	0.00		20	0.23
31	31-Jan-01	0.00	0.00	0.00		20	0.21
32	1-Feb-01	0.00	0.00	0.00		20	0.14
33	2-Feb-01	0.00	0.00	0.00		20	0.02
34	3-Feb-01	0.00	0.00	0.00		20	0.00
35	4-Feb-01	0.64	0.00	0.22		20	0.09
36	5-Feb-01	0.96	0.00	0.46		20	0.23
37	6-Feb-01	1.28	0.48	0.89		20	0.41
38	7-Feb-01	1.12	0.16	0.40		20	0.57
39	8-Feb-01	0.16	0.00	0.01		20	0.59
40	9-Feb-01	0.00	0.00	0.00		20	0.59
41	10-Feb-01	0.00	0.00	0.00		20	0.59
42	11-Feb-01	0.00	0.00	0.00		20	0.50
43	12-Feb-01	0.00	0.00	0.00		20	0.37
44	13-Feb-01	0.00	0.00	0.00		20	0.18
45	14-Feb-01	0.00	0.00	0.00		20	0.02
46	15-Feb-01	0.32	0.00	0.09		20	0.05
47	16-Feb-01	1.28	0.16	0.65		20	0.23

Idaho Cold Water Aquatic Life Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
22 °C Instantaneous	3	4%	
19 °C Average	8	10%	
Days Evaluated & Date Range	80	22-Jun	21-Sep

Idaho Salmonid Spawning Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Instantaneous Spring	26	28%	
9 °C Average Spring	34	37%	
Spring Days Eval'd w/in Dates	92	15-Apr	15-Jul
13 °C Instantaneous Fall	25	31%	
9 °C Average Fall	29	36%	
Fall Days Eval'd w/in Dates	81	15-Aug	15-Nov
13 °C Instantaneous Total *	51	29%	
9 °C Average Total *	63	36%	
Tot Days Eval'd w/in Both Dates *	173		
* If spring & fall dates overlap double counting may occur.			

Idaho Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Juvnl Rearing MWMT (J)	68	76%	
Juvenile Days Eval'd w/in Dates	89	1-Jun	31-Aug
9 °C Spawning Daily Ave (S)	15	29%	
Spawning Days Eval'd w/in Dates	52	1-Sep	31-Oct

NOTES
Comments: Data from one deployment wrapped so that fall 2000 data follows summer 2001 data. Data gap from 8-29 thru 9-9. This stream is <i>a priori</i> natural, watershed is entirely in Wilderness. Monitored as state Outstanding Resource Water nominee. temperature exceeds Idaho's cold water aquatic life daily maximum criterion less than 10% of the critical summer period.

DEQ Summary of Temperature Data

Data Source: DEQ
 Water Body: Bear Creek
 Data Collection Site: near mouth
 Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301
 HUC4 Name: Upper Selway
 North of the Salmon Clearwater Divide
 Idaho Bull Trout Elevation: 767 M
 Waterbody ID Number: 47

Import File : ... wAway\Selway 2001\Bear Creek 2001-00ed.txt
 Calibration Factor : 0.07

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
48	17-Feb-01	1.76	0.96	1.37		20	0.48
49	18-Feb-01	2.08	1.12	1.62		20	0.78
50	19-Feb-01	2.08	1.28	1.70		20	1.07
51	20-Feb-01	2.08	0.48	1.16		20	1.37
52	21-Feb-01	2.08	1.28	1.74		20	1.67
53	22-Feb-01	2.55	1.28	1.90		20	1.99
54	23-Feb-01	2.24	1.44	1.98		20	2.12
55	24-Feb-01	2.24	1.12	1.78		20	2.19
56	25-Feb-01	1.92	0.16	1.07		20	2.17
57	26-Feb-01	2.40	0.48	1.25		20	2.22
58	27-Feb-01	2.24	0.00	0.71		20	2.24
59	28-Feb-01	0.96	0.00	0.11		20	2.08
60	1-Mar-01	0.00	0.00	0.00		20	1.71
61	2-Mar-01	1.60	0.00	0.73		20	1.62
62	3-Mar-01	2.24	0.16	1.07		20	1.62
63	4-Mar-01	2.40	0.32	1.30		20	1.69
64	5-Mar-01	2.87	1.28	2.08		20	1.76
65	6-Mar-01	3.34	0.64	1.95		20	1.92
66	7-Mar-01	3.19	0.48	1.91		20	2.23
67	8-Mar-01	3.34	0.32	1.79		20	2.71
68	9-Mar-01	2.71	1.28	1.93		20	2.87
69	10-Mar-01	3.34	1.44	2.25		20	3.03
70	11-Mar-01	2.55	1.60	2.14		20	3.05
71	12-Mar-01	3.50	1.76	2.47		20	3.14
72	13-Mar-01	4.12	2.08	3.03		20	3.25
73	14-Mar-01	3.34	1.92	2.59		20	3.27
74	15-Mar-01	3.97	1.28	2.45		20	3.36
75	16-Mar-01	3.81	1.76	2.71		20	3.52
76	17-Mar-01	3.97	1.60	2.71		20	3.61
77	18-Mar-01	5.07	2.40	3.55		20	3.97
78	19-Mar-01	3.97	2.87	3.41		20	4.04
79	20-Mar-01	5.69	2.08	3.43		20	4.26
80	21-Mar-01	5.54	1.28	3.06		20	4.57
81	22-Mar-01	5.38	0.96	2.90		20	4.78
82	23-Mar-01	5.85	1.44	3.25		20	5.07
83	24-Mar-01	5.54	2.40	3.71		20	5.29
84	25-Mar-01	3.34	2.24	2.85		20	5.04
85	26-Mar-01	3.97	2.40	3.10		20	5.04
86	27-Mar-01	5.07	2.55	3.55		20	4.96
87	28-Mar-01	4.91	3.34	4.04		20	4.87
88	29-Mar-01	5.69	3.50	4.47		20	4.91
89	30-Mar-01	5.54	3.66	4.40		20	4.87
90	31-Mar-01	4.12	2.55	3.45		20	4.66
91	1-Apr-01	6.16	3.34	4.48		19	5.07
92	2-Apr-01	4.60	3.50	3.95		20	5.16
93	3-Apr-01	5.69	2.40	3.64		20	5.24
94	4-Apr-01	5.69	3.03	4.06		20	5.36
95	5-Apr-01	6.16	1.92	3.70		20	5.42
96	6-Apr-01	4.91	2.71	3.78		20	5.33
97	7-Apr-01	5.54	3.66	4.38		20	5.54

STATISTICS	
Maximum Daily Maximum (MDM)	23.0 °C
Maximum 7-Day Maximum (MWM)	22.1 °C
Maximum Daily Average (MDA)	20.0 °C
Maximum 7-Day Average (MWA)	19.2 °C
Mean Daily Maximum	7.4 °C
Mean Daily Average	6.2 °C
Mean Daily Minimum	5.2 °C
Minimum 7-Day Minimum	0.0 °C
Minimum Daily Minimum	0.0 °C
Mean of all Data	6.2 °C

EPA Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
10 °C 7-Day Avg of Daily Max	88	80%	
Nmbr of 7-Day Avg's w/in Dates	110	1-Jun	30-Sep

Seasonal Cold Water Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
26 °C Instantaneous	0	0%	
23 °C Average	0	0%	
Days Evaluated and Date Range	80	22-Jun	21-Sep

DEQ Summary of Temperature Data

Data Source: DEQ
Water Body: Bear Creek
Data Collection Site: near mouth
Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301
HUC4 Name: Upper Selway
North of the Salmon Clearwater Divide
Idaho Bull Trout Elevation: 767 M
Waterbody ID Number: 47

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
98	8-Apr-01	5.07	2.71	3.62		20	5.38
99	9-Apr-01	4.75	2.71	3.61		20	5.40
100	10-Apr-01	5.38	2.71	3.88		20	5.36
101	11-Apr-01	5.38	3.03	4.02		20	5.31
102	12-Apr-01	5.22	3.50	4.27		20	5.18
103	13-Apr-01	5.54	3.19	4.13		20	5.27
104	14-Apr-01	6.47	2.87	4.22		20	5.40
105	15-Apr-01	7.40	2.24	4.50		20	5.73
106	16-Apr-01	7.71	2.87	5.10		20	6.16
107	17-Apr-01	8.32	3.97	6.00		20	6.58
108	18-Apr-01	7.55	5.07	6.23		20	6.89
109	19-Apr-01	7.24	4.75	5.88		20	7.18
110	20-Apr-01	5.38	3.66	4.57		20	7.15
111	21-Apr-01	6.16	3.97	4.96		20	7.11
112	22-Apr-01	7.24	3.81	5.25		20	7.09
113	23-Apr-01	7.09	4.91	5.86		20	7.00
114	24-Apr-01	9.41	5.22	6.85		20	7.15
115	25-Apr-01	8.79	4.60	6.61		20	7.33
116	26-Apr-01	7.55	3.97	5.93		20	7.37
117	27-Apr-01	6.31	3.66	5.01		20	7.51
118	28-Apr-01	5.22	3.34	4.37		20	7.37
119	29-Apr-01	5.38	3.34	4.37		20	7.11
120	30-Apr-01	4.91	4.28	4.64		20	6.80
121	1-May-01	4.60	3.34	3.98		20	6.11
122	2-May-01	5.22	3.03	4.03		20	5.60
123	3-May-01	6.62	2.87	4.64		20	5.47
124	4-May-01	7.86	3.81	5.67		20	5.69
125	5-May-01	6.94	5.07	5.74		20	5.93
126	6-May-01	6.78	3.19	4.90		20	6.13
127	7-May-01	7.71	3.50	5.48		20	6.53
128	8-May-01	7.55	4.44	6.11		20	6.95
129	9-May-01	7.40	4.60	6.07		20	7.27
130	10-May-01	7.86	4.28	6.07		20	7.44
131	11-May-01	8.02	3.97	6.00		20	7.47
132	12-May-01	8.02	4.44	6.18		20	7.62
133	13-May-01	6.94	4.91	5.92		20	7.64
134	14-May-01	6.31	4.60	5.50		20	7.44
135	15-May-01	6.00	4.60	5.38		20	7.22
136	16-May-01	6.00	5.22	5.56		20	7.02
137	17-May-01	6.94	3.81	5.32		20	6.89
138	18-May-01	6.78	5.54	6.11		20	6.71
139	19-May-01	7.71	4.60	6.09		20	6.67
140	20-May-01	7.55	5.69	6.62		20	6.76
141	21-May-01	8.02	4.28	6.08		20	7.00
142	22-May-01	9.25	5.38	7.15		20	7.46
143	23-May-01	9.56	5.85	7.64		20	7.97
144	24-May-01	9.25	6.00	7.61		20	8.30
145	25-May-01	9.72	6.78	8.02		20	8.72
146	26-May-01	9.41	6.78	8.08		20	8.97
147	27-May-01	9.10	7.09	8.16		20	9.19
148	28-May-01	9.72	7.09	8.47		20	9.43

Import File : ... wAway\Selway 2001\Bear Creek 2001-00ed.txt
Calibration Factor : 0.07

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Bear Creek

Data Collection Site: near mouth

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 767 M

Waterbody ID Number: 47

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
149	29-May-01	9.56	7.24	8.19		20	9.47
150	30-May-01	8.48	5.85	7.13		20	9.32
151	31-May-01	10.35	7.71	8.82		20	9.48
152	1-Jun-01	10.35	8.02	9.16		20	9.57
153	2-Jun-01	10.35	8.64	9.22		20	9.70
154	3-Jun-01	8.48	6.47	7.40		20	9.61
155	4-Jun-01	6.47	3.81	4.91		20	9.15
156	5-Jun-01	6.78	4.60	5.62		20	8.75
157	6-Jun-01	8.79	6.00	7.20		20	8.80
158	7-Jun-01	8.02	6.16	7.14		20	8.46
159	8-Jun-01	10.19	6.47	8.20		20	8.44
160	9-Jun-01	10.96	8.48	9.76		20	8.53
161	10-Jun-01	10.35	8.64	9.43		20	8.79
162	11-Jun-01	9.87	8.02	8.99		20	9.28
163	12-Jun-01	9.25	6.47	7.87		20	9.63
164	13-Jun-01	6.31	4.91	5.59		20	9.28
165	14-Jun-01	8.17	5.69	6.79		20	9.30
166	15-Jun-01	10.96	7.24	8.77		20	9.41
167	16-Jun-01	11.74	7.09	9.25		20	9.52
168	17-Jun-01	11.58	8.94	10.15		20	9.70
169	18-Jun-01	11.74	8.17	9.82		20	9.96
170	19-Jun-01	12.04	7.71	9.79		20	10.36
171	20-Jun-01	13.44	8.79	10.88		20	11.38
172	21-Jun-01	14.84	10.19	12.28		20	12.33
173	22-Jun-01	15.80	11.42	13.43	J	20	13.03
174	23-Jun-01	15.48	12.20	13.87	J	20	13.56
175	24-Jun-01	15.00	12.20	13.58	J	20	14.05
176	25-Jun-01	14.37	11.27	12.80	J	20	14.42
177	26-Jun-01	15.64	11.58	13.43	J	20	14.94
178	27-Jun-01	15.32	12.36	13.83	J	20	15.21
179	28-Jun-01	16.43	12.67	14.37	J	20	15.43
180	29-Jun-01	17.39	12.51	14.76	J	20	15.66
181	30-Jun-01	16.91	13.29	15.08	J	20	15.87
182	1-Jul-01	18.67	13.60	15.98	J	20	16.39
183	2-Jul-01	19.00	13.90	16.37	J	20	17.05
184	3-Jul-01	19.49	14.06	16.70	J	20	17.60
185	4-Jul-01	18.51	15.16	16.53	J	20	18.06
186	5-Jul-01	16.91	15.64	16.02	J	20	18.13
187	6-Jul-01	19.16	13.60	16.02	J	20	18.38
188	7-Jul-01	18.03	13.29	15.72	J	20	18.54
189	8-Jul-01	19.16	14.69	16.67	J	20	18.61
190	9-Jul-01	19.00	15.48	17.11	J	20	18.61
191	10-Jul-01	21.45	15.32	18.13	J	20	18.89
192	11-Jul-01	19.32	15.32	17.47	J	20	19.00
193	12-Jul-01	19.49	15.48	17.32	J	20	19.37
194	13-Jul-01	17.87	14.52	16.24	J	20	19.19
195	14-Jul-01	20.62	13.44	16.72	J	20	19.56
196	15-Jul-01	18.35	15.48	16.79	J	20	19.44
197	16-Jul-01	15.96	13.90	14.77	J	20	19.01

Import File : ... wAway\Selway 2001\Bear Creek 2001-00ed.txt

Calibration Factor : 0.07

DEQ Summary of Temperature Data

Data Source: DEQ
Water Body: Bear Creek
Data Collection Site: near mouth
Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301
HUC4 Name: Upper Selway
North of the Salmon Clearwater Divide
Idaho Bull Trout Elevation: 767 M
Waterbody ID Number: 47

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn		Nbr of Msr mts per day	7-Day Averag e of High
198	17-Jul-01	16.11	12.20	14.01	J		20	18.25
199	18-Jul-01	16.91	12.51	14.50	J		20	17.90
200	19-Jul-01	19.97	13.14	16.09	J		20	17.97
201	20-Jul-01	19.49	14.21	16.65	J		20	18.20
202	21-Jul-01	20.30	14.84	17.18	J		20	18.16
203	22-Jul-01	21.12	14.69	17.67	J		20	18.55
204	23-Jul-01	20.79	13.90	17.41	J		20	19.24
205	24-Jul-01	21.12	14.06	17.60	J		20	19.96
206	25-Jul-01	21.62	14.69	18.07	J		20	20.63
207	26-Jul-01	21.45	14.52	18.00	J		20	20.84
208	27-Jul-01	21.62	14.37	18.08	J		20	21.15
209	28-Jul-01	19.97	15.32	17.83	J		20	21.10
210	29-Jul-01	17.71	13.60	15.86	J		20	20.61
211	30-Jul-01	15.48	13.29	14.24	J		20	19.85
212	31-Jul-01	14.52	12.51	13.43	J		20	18.91
213	1-Aug-01	17.55	10.81	13.76	J		20	18.33
214	2-Aug-01	20.30	12.82	16.12	J		20	18.16
215	3-Aug-01	19.81	14.21	17.08	J		20	17.91
216	4-Aug-01	19.16	14.84	17.06	J		20	17.79
217	5-Aug-01	21.29	14.06	17.40	J		20	18.30
218	6-Aug-01	22.29	15.00	18.59	J		20	19.27
219	7-Aug-01	22.96	16.11	19.61	J		20	20.48
220	8-Aug-01	22.79	16.91	20.01	J		20	21.23
221	9-Aug-01	21.79	16.11	19.14	J		20	21.44
222	10-Aug-01	21.79	15.48	18.80	J		20	21.72
223	11-Aug-01	21.12	15.16	18.40	J		20	22.00
224	12-Aug-01	21.95	15.32	18.71	J		20	22.10
225	13-Aug-01	21.45	17.55	19.94	J		20	21.98
226	14-Aug-01	21.95	16.75	19.49	J		20	21.83
227	15-Aug-01	21.79	16.43	19.37	J		20	21.69
228	16-Aug-01	21.62	16.27	19.17	J		20	21.67
229	17-Aug-01	20.79	15.80	18.69	J		20	21.52
230	18-Aug-01	21.12	16.59	19.22	J		20	21.52
231	19-Aug-01	19.97	15.48	18.17	J		20	21.24
232	20-Aug-01	19.49	14.21	17.18	J		20	20.96
233	21-Aug-01	19.32	14.37	17.20	J		20	20.59
234	22-Aug-01	18.35	14.69	17.03	J		20	20.09
235	23-Aug-01	18.51	14.69	16.87	J		20	19.65
236	24-Aug-01	19.65	16.27	17.93	J		20	19.49
237	25-Aug-01	19.16	14.37	17.02	J		20	19.21
238	26-Aug-01	19.65	14.37	17.22	J		20	19.16
239	27-Aug-01	19.97	15.48	17.85	J		20	19.23
240	28-Aug-01	19.49	15.80	17.75	J		20	19.25
241	10-Sep-01	13.14	10.04	10.93		S	20	18.51
242	11-Sep-01	12.98	10.19	11.34		S	20	17.72
243	12-Sep-01	14.37	9.87	11.88		S	20	16.97
244	13-Sep-01	15.80	10.96	13.17		S	20	16.49
245	14-Sep-01	15.96	11.58	13.92		S	20	15.96
246	15-Sep-01	16.43	12.20	14.48		S	20	15.45

Import File : ... wAway\Selway 2001\Bear Creek 2001-00ed.txt
Calibration Factor : 0.07

DEQ Summary of Temperature Data

Data Source: DEQ
Water Body: Bear Creek
Data Collection Site: near mouth
Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301
HUC4 Name: Upper Selway
North of the Salmon Clearwater Divide
Idaho Bull Trout Elevation: 767 M
Waterbody ID Number: 47

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
247	16-Sep-01	17.07	13.60	15.65	S	20	15.11
248	17-Sep-01	17.07	14.06	15.75	S	20	15.67
249	18-Sep-01	16.59	13.44	14.74	S	20	16.18
250	19-Sep-01	15.48	13.90	14.69	S	20	16.34
251	20-Sep-01	14.84	11.58	13.09	S	20	16.21
252	21-Sep-01	13.29	11.27	12.08	S	20	15.82
253	22-Sep-01	10.96	8.02	9.02	S	20	15.04
254	23-Sep-01	8.94	5.07	6.95		20	13.88
255	24-Sep-01	8.32	4.44	6.50		20	12.63
256	25-Sep-01	8.79	4.91	6.95		20	11.52
257	26-Sep-01	8.94	5.38	7.34		20	10.58
258	27-Sep-01	9.10	5.54	7.52		20	9.76
259	28-Sep-01	9.10	6.16	7.85		20	9.16
260	29-Sep-01	9.10	7.09	8.24		20	8.90
261	30-Sep-01	9.41	8.48	8.85		20	8.97
262	1-Oct-01	9.87	9.10	9.42	S	20	9.19
263	2-Oct-01	9.72	8.48	9.05	S	20	9.32
264	3-Oct-01	8.79	7.09	7.85		20	9.30
265	4-Oct-01	8.48	5.38	6.65		20	9.21
266	5-Oct-01	7.55	4.75	5.99		20	8.99
267	6-Oct-01	6.62	3.50	4.86		20	8.63
268	7-Oct-01	6.62	3.19	4.64		20	8.24
269	8-Oct-01	7.09	3.50	5.01		20	7.84
270	9-Oct-01	7.55	3.97	5.48		20	7.53
271	10-Oct-01	7.55	5.54	6.50		20	7.35
272	11-Oct-01	8.79	6.78	7.52		20	7.40
273	12-Oct-01	8.02	7.40	7.61		20	7.46
274	13-Oct-01	7.55	6.78	7.15		20	7.60
275	14-Oct-01	7.24	6.16	6.66		20	7.68
276	15-Oct-01	8.17	6.31	6.89		20	7.84
277	16-Oct-01	7.40	5.38	6.32		20	7.82
278	17-Oct-01	7.40	5.07	6.07		20	7.80
279	18-Oct-01	7.24	5.07	5.99		20	7.57
280	19-Oct-01	8.17	6.62	7.14		20	7.60
281	20-Oct-01	6.78	5.85	6.42		20	7.49
282	21-Oct-01	7.09	5.85	6.66		20	7.46
283	22-Oct-01	5.69	4.28	5.04		20	7.11
284	23-Oct-01	3.97	2.40	3.26		20	6.62
285	24-Oct-01	4.44	2.40	3.15		20	6.20
286	25-Oct-01	4.28	2.55	3.29		20	5.77
287	26-Oct-01	4.60	2.71	3.54		20	5.26
288	27-Oct-01	6.16	4.12	5.05		20	5.18
289	28-Oct-01	5.38	3.81	4.64		20	4.93
290	29-Oct-01	6.16	4.91	5.48		21	5.00
291	30-Oct-01	6.16	5.38	5.67		20	5.31
292	31-Oct-01	5.69	4.60	5.20		20	5.49
293	1-Nov-01	5.07	3.81	4.49		20	5.60
294	2-Nov-01	3.66	2.24	3.12		20	5.47
295	3-Nov-01	2.87	1.28	1.94		20	5.00
296	4-Nov-01	2.55	1.12	1.81		20	4.59

Import File : ... wAway\Selway 2001\Bear Creek 2001-00ed.txt
Calibration Factor : 0.07

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Bear Creek

Data Collection Site: near mouth

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 767 M

Waterbody ID Number: 47

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
297	5-Nov-01	2.24	1.92	2.17		20	4.03
298	6-Nov-01	3.03	2.08	2.45		20	3.59
299	7-Nov-01	2.40	1.28	1.95		20	3.12
300	8-Nov-01	1.12	0.16	0.59		20	2.55
301	9-Nov-01	1.60	0.48	0.96		20	2.26
302	10-Nov-01	0.16	0.00	0.01		20	1.87
303	11-Nov-01	0.00	0.00	0.00		20	1.51
304	12-Nov-01	0.00	0.00	0.00		20	1.19
305	13-Nov-01	0.00	0.00	0.00		20	0.75
306	14-Nov-01	0.00	0.00	0.00		20	0.41
307	15-Nov-01	0.00	0.00	0.00		20	0.25
308	16-Nov-01	0.00	0.00	0.00		20	0.02
309	17-Nov-01	0.00	0.00	0.00		20	0.00
310	18-Nov-01	0.00	0.00	0.00		20	0.00
311	19-Nov-01	0.00	0.00	0.00		20	0.00
312	20-Nov-01	0.00	0.00	0.00		20	0.00
313	21-Nov-01	0.00	0.00	0.00		20	0.00
314	22-Nov-01	0.00	0.00	0.00		20	0.00
315	23-Nov-01	0.00	0.00	0.00		20	0.00
316	24-Nov-01	0.00	0.00	0.00		20	0.00
317	25-Nov-01	0.00	0.00	0.00		20	0.00
318	26-Nov-01	0.00	0.00	0.00		20	0.00
319	27-Nov-01	0.00	0.00	0.00		20	0.00
320	28-Nov-01	0.00	0.00	0.00		20	0.00
321	29-Nov-01	0.00	0.00	0.00		20	0.00
322	30-Nov-01	0.00	0.00	0.00		20	0.00
323	1-Dec-01	0.00	0.00	0.00		20	0.00
324	2-Dec-01	0.00	0.00	0.00		20	0.00
325	3-Dec-01	0.00	0.00	0.00		20	0.00
326	4-Dec-01	0.48	0.00	0.06		20	0.07
327	5-Dec-01	1.44	0.48	0.95		20	0.27
328	6-Dec-01	1.28	0.00	0.78		20	0.46
329	7-Dec-01	0.00	0.00	0.00		20	0.46
330	8-Dec-01	0.00	0.00	0.00		20	0.46
331	9-Dec-01	0.00	0.00	0.00		20	0.46
332	10-Dec-01	0.00	0.00	0.00		20	0.46
333	11-Dec-01	0.00	0.00	0.00		20	0.39
334	12-Dec-01	0.00	0.00	0.00		20	0.18
335	13-Dec-01	0.00	0.00	0.00		20	0.00
336	14-Dec-01	0.00	0.00	0.00		20	0.00
337	15-Dec-01	0.00	0.00	0.00		20	0.00
338	16-Dec-01	0.00	0.00	0.00		20	0.00
339	17-Dec-01	0.00	0.00	0.00		20	0.00
340	18-Dec-01	0.00	0.00	0.00		20	0.00
341	19-Dec-01	0.00	0.00	0.00		20	0.00
342	20-Dec-01	0.00	0.00	0.00		20	0.00
343	21-Dec-01	0.00	0.00	0.00		20	0.00
344	22-Dec-01	0.00	0.00	0.00		20	0.00
345	23-Dec-01	0.00	0.00	0.00		20	0.00
346	24-Dec-01	0.00	0.00	0.00		20	0.00
347	25-Dec-01	0.00	0.00	0.00		20	0.00

Import File : ... wAway\Selway 2001\Bear Creek 2001-00ed.txt

Calibration Factor : 0.07

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Bear Creek

Data Collection Site: near mouth

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 767 M

Waterbody ID Number: 47

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
348	26-Dec-01	0.00	0.00	0.00		20	0.00
349	27-Dec-01	0.00	0.00	0.00		20	0.00
350	28-Dec-01	0.16	0.00	0.05		20	0.02
351	29-Dec-01	0.16	0.00	0.01		20	0.05
352	30-Dec-01	0.80	0.00	0.24		20	0.16
353	31-Dec-01	1.12	0.64	0.91		20	0.32

Import File : ... wAway\Selway 2001\Bear Creek 2001-00ed.txt

Calibration Factor : 0.07

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Big Creek

Data Collection Site: ~1km above mouth

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060206

HUC4 Name: Lower Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1050 M

Waterbody ID Number: 3

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S-spawn	Nbr of Msr mts per day	7-Day Average of High
1	1-Jan-01	0.00	0.00	0.00		20	
2	2-Jan-01	0.00	0.00	0.00		20	
3	3-Jan-01	0.00	0.00	0.00		20	
4	4-Jan-01	0.00	0.00	0.00		20	
5	5-Jan-01	0.00	0.00	0.00		20	
6	6-Jan-01	0.00	0.00	0.00		20	
7	7-Jan-01	0.00	0.00	0.00		20	0.00
8	8-Jan-01	0.00	0.00	0.00		20	0.00
9	9-Jan-01	0.00	0.00	0.00		20	0.00
10	10-Jan-01	0.00	0.00	0.00		20	0.00
11	11-Jan-01	0.00	0.00	0.00		20	0.00
12	12-Jan-01	0.00	0.00	0.00		20	0.00
13	13-Jan-01	0.00	0.00	0.00		20	0.00
14	14-Jan-01	0.00	0.00	0.00		20	0.00
15	15-Jan-01	0.00	0.00	0.00		20	0.00
16	16-Jan-01	0.00	0.00	0.00		20	0.00
17	17-Jan-01	0.00	0.00	0.00		20	0.00
18	18-Jan-01	0.00	0.00	0.00		20	0.00
19	19-Jan-01	0.00	0.00	0.00		20	0.00
20	20-Jan-01	0.00	0.00	0.00		20	0.00
21	21-Jan-01	0.00	0.00	0.00		20	0.00
22	22-Jan-01	0.16	0.00	0.03		20	0.02
23	23-Jan-01	0.16	0.00	0.04		20	0.05
24	24-Jan-01	0.16	0.00	0.06		20	0.07
25	25-Jan-01	0.16	0.00	0.05		20	0.09
26	26-Jan-01	0.00	0.00	0.00		20	0.09
27	27-Jan-01	0.00	0.00	0.00		20	0.09
28	28-Jan-01	0.16	0.00	0.01		20	0.11
29	29-Jan-01	0.16	0.16	0.16		20	0.11
30	30-Jan-01	0.32	0.16	0.31		20	0.14
31	31-Jan-01	0.32	0.16	0.26		20	0.16
32	1-Feb-01	0.16	0.00	0.10		20	0.16
33	2-Feb-01	0.48	0.16	0.23		20	0.23
34	3-Feb-01	0.32	0.00	0.20		20	0.27
35	4-Feb-01	0.48	0.00	0.22		20	0.32
36	5-Feb-01	0.48	0.16	0.30		20	0.37
37	6-Feb-01	0.64	0.00	0.32		20	0.41
38	7-Feb-01	0.32	0.00	0.14		20	0.41
39	8-Feb-01	0.00	0.00	0.00		20	0.39
40	9-Feb-01	0.00	0.00	0.00		20	0.32
41	10-Feb-01	0.00	0.00	0.00		20	0.27
42	11-Feb-01	0.00	0.00	0.00		20	0.21
43	12-Feb-01	0.00	0.00	0.00		20	0.14
44	13-Feb-01	0.32	0.00	0.05		20	0.09
45	14-Feb-01	0.00	0.00	0.00		20	0.05
46	15-Feb-01	0.32	0.00	0.12		20	0.09
47	16-Feb-01	0.48	0.16	0.28		20	0.16

Import File : ... way\Selway 2001\Temp\Big Creek 2001-00.txt

Calibration Factor : 0.1

Idaho Cold Water Aquatic Life Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
22 °C Instantaneous	0	0%	
19 °C Average	1	1%	
Days Evaluated & Date Range	92	22-Jun	21-Sep

Idaho Salmonid Spawning Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Instantaneous Spring	35	38%	
9 °C Average Spring	53	58%	
Spring Days Eval'd w/in Dates	92	15-Apr	15-Jul
13 °C Instantaneous Fall	36	39%	
9 °C Average Fall	41	44%	
Fall Days Eval'd w/in Dates	93	15-Aug	15-Nov
13 °C Instantaneous Total *	71	38%	
9 °C Average Total *	94	51%	
Tot Days Eval'd w/in Both Dates *	185		
* If spring & fall dates overlap double counting may occur.			

Idaho Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Juvnl Rearing MWMT (J)	0	0%	
Juvenile Days Eval'd w/in Dates	0	1-Jun	31-Aug
9 °C Spawning Daily Ave (S)	0	0%	
Spawning Days Eval'd w/in Dates	0	1-Sep	31-Oct

NOTES

Comments: Data from one deployment wrapped so that fall 2000 data follows summer 2001. Stream is *a priori* natural. Monitored as state Outstanding Resource Water nominee. Temperature exceeds Idaho's cold water aquatic life criteria less than 10% of the critical summer period.

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Big Creek

Data Collection Site: ~1km above mouth

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060206

HUC4 Name: Lower Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1050 M

Waterbody ID Number: 3

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S-spawn	Nbr of Msrmts per day	7-Day Average of High
48	17-Feb-01	0.64	0.00	0.32		20	0.25
49	18-Feb-01	0.81	0.00	0.38		20	0.37
50	19-Feb-01	0.64	0.00	0.31		20	0.46
51	20-Feb-01	0.48	0.16	0.35		20	0.48
52	21-Feb-01	1.12	0.32	0.61		20	0.64
53	22-Feb-01	0.96	0.32	0.58		20	0.73
54	23-Feb-01	0.96	0.16	0.48		20	0.80
55	24-Feb-01	0.96	0.16	0.49		20	0.85
56	25-Feb-01	0.32	0.00	0.10		20	0.78
57	26-Feb-01	0.32	0.00	0.10		20	0.73
58	27-Feb-01	0.16	0.00	0.02		20	0.69
59	28-Feb-01	0.00	0.00	0.00		20	0.53
60	1-Mar-01	0.00	0.00	0.00		20	0.39
61	2-Mar-01	0.00	0.00	0.00		20	0.25
62	3-Mar-01	0.81	0.00	0.31		20	0.23
63	4-Mar-01	0.96	0.00	0.45		20	0.32
64	5-Mar-01	1.44	0.48	0.79		20	0.48
65	6-Mar-01	1.76	0.16	0.76		20	0.71
66	7-Mar-01	1.91	0.16	0.77		20	0.98
67	8-Mar-01	1.91	0.16	0.82		20	1.26
68	9-Mar-01	1.44	0.81	1.01		20	1.46
69	10-Mar-01	1.91	0.64	1.11		20	1.62
70	11-Mar-01	1.44	0.64	0.99		20	1.69
71	12-Mar-01	2.38	0.81	1.31		20	1.82
72	13-Mar-01	2.54	0.32	1.19		20	1.93
73	14-Mar-01	1.76	0.48	1.16		20	1.91
74	15-Mar-01	1.91	0.00	0.85		20	1.91
75	16-Mar-01	1.91	0.48	1.15		20	1.98
76	17-Mar-01	2.86	0.32	1.27		20	2.11
77	18-Mar-01	3.02	0.96	1.72		20	2.34
78	19-Mar-01	2.23	1.12	1.60		20	2.32
79	20-Mar-01	5.52	1.91	3.32		20	2.74
80	21-Mar-01	5.98	2.86	4.15		20	3.35
81	22-Mar-01	6.14	2.70	4.16		20	3.95
82	23-Mar-01	6.45	3.02	4.56		20	4.60
83	24-Mar-01	6.76	4.11	5.39		20	5.16
84	25-Mar-01	6.14	4.42	5.03		20	5.60
85	26-Mar-01	4.89	3.80	4.46		20	5.98
86	27-Mar-01	5.83	3.02	4.23		20	6.03
87	28-Mar-01	7.07	4.27	5.38		20	6.18
88	29-Mar-01	7.99	5.21	6.39		20	6.45
89	30-Mar-01	7.99	5.52	6.63		20	6.67
90	31-Mar-01	7.22	4.42	5.42		20	6.73
91	1-Apr-01	7.69	4.58	5.73		19	6.95
92	2-Apr-01	7.38	4.27	5.42		20	7.31
93	3-Apr-01	5.52	2.38	3.82		20	7.27
94	4-Apr-01	6.29	3.64	4.62		20	7.15
95	5-Apr-01	7.07	3.17	4.85		20	7.02
96	6-Apr-01	7.07	4.58	5.38		20	6.89
97	7-Apr-01	5.52	3.80	4.61		20	6.65

Import File : ... way\Selway 2001\Temp\Big Creek 2001-00.txt
Calibration Factor : 0.1

STATISTICS	
Maximum Daily Maximum (MDM)	21.2 °C
Maximum 7-Day Maximum (MWM)	20.4 °C
Maximum Daily Average (MDA)	19.1 °C
Maximum 7-Day Average (MWA)	18.7 °C
Mean Daily Maximum	8.1 °C
Mean Daily Average	7.0 °C
Mean Daily Minimum	6.1 °C
Minimum 7-Day Minimum	0.0 °C
Minimum Daily Minimum	-0.2 °C
Mean of all Data	7.0 °C

EPA Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
10 °C 7-Day Avg of Daily Max	119	98%	
Nmbr of 7-Day Avg's w/in Dates	122	1-Jun	30-Sep

Seasonal Cold Water Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
26 °C Instantaneous	0	0%	
23 °C Average	0	0%	
Days Evaluated and Date Range	92	22-Jun	21-Sep

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Big Creek

Data Collection Site: ~1km above mouth

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060206

HUC4 Name: Lower Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1050 M

Waterbody ID Number: 3

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
98	8-Apr-01	4.89	3.33	4.17		20	6.25
99	9-Apr-01	4.89	2.86	3.74		20	5.89
100	10-Apr-01	6.14	2.70	4.09		20	5.98
101	11-Apr-01	5.83	3.96	4.78		20	5.92
102	12-Apr-01	5.98	4.11	5.00		20	5.76
103	13-Apr-01	5.83	3.96	4.82		20	5.58
104	14-Apr-01	7.84	3.64	5.34		20	5.91
105	15-Apr-01	8.61	4.89	6.64		20	6.45
106	16-Apr-01	9.07	5.67	7.26		20	7.04
107	17-Apr-01	10.47	6.61	8.47		20	7.66
108	18-Apr-01	10.32	7.22	8.78		20	8.30
109	19-Apr-01	9.69	7.07	8.20		20	8.83
110	20-Apr-01	8.31	5.98	6.83		20	9.19
111	21-Apr-01	7.53	5.36	6.36		20	9.14
112	22-Apr-01	8.46	4.89	6.44		20	9.12
113	23-Apr-01	8.61	6.61	7.49		20	9.06
114	24-Apr-01	11.71	6.92	8.83		20	9.23
115	25-Apr-01	12.63	8.31	10.41		20	9.56
116	26-Apr-01	12.17	8.61	10.30		20	9.92
117	27-Apr-01	10.47	8.31	9.48		20	10.23
118	28-Apr-01	9.84	7.38	8.17		20	10.56
119	29-Apr-01	7.53	5.52	6.44		20	10.42
120	30-Apr-01	7.53	5.98	6.47		20	10.27
121	1-May-01	7.53	5.36	6.51		20	9.67
122	2-May-01	6.61	4.27	5.27		20	8.81
123	3-May-01	8.46	3.80	5.64		20	8.28
124	4-May-01	9.84	5.67	7.51		20	8.19
125	5-May-01	10.16	7.69	9.00		20	8.24
126	6-May-01	9.07	5.52	7.42		20	8.46
127	7-May-01	9.84	5.83	7.71		20	8.79
128	8-May-01	9.53	7.22	8.49		20	9.07
129	9-May-01	9.23	7.07	8.18		20	9.45
130	10-May-01	9.53	6.45	7.90		20	9.60
131	11-May-01	9.53	6.45	8.03		20	9.56
132	12-May-01	9.69	7.07	8.30		20	9.49
133	13-May-01	9.69	7.38	8.47		20	9.58
134	14-May-01	8.46	6.76	7.62		20	9.38
135	15-May-01	7.84	6.45	7.06		20	9.14
136	16-May-01	7.53	6.29	6.95		20	8.90
137	17-May-01	7.69	5.52	6.65		20	8.63
138	18-May-01	9.53	6.76	7.88		20	8.63
139	19-May-01	9.23	6.92	8.03		20	8.57
140	20-May-01	9.53	7.07	8.27		20	8.54
141	21-May-01	9.84	5.98	7.82		20	8.74
142	22-May-01	11.39	7.38	9.25		20	9.25
143	23-May-01	12.01	8.31	10.17		20	9.89
144	24-May-01	11.39	8.61	10.25		20	10.42
145	25-May-01	10.78	8.61	9.86		20	10.60
146	26-May-01	10.93	8.31	9.71		20	10.84
147	27-May-01	10.63	8.92	9.68		20	11.00
148	28-May-01	11.09	7.99	9.47		20	11.17

Import File : ... way\Selway 2001\Temp\Big Creek 2001-00.txt
Calibration Factor : 0.1

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Big Creek

Data Collection Site: ~1km above mouth

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060206

HUC4 Name: Lower Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1050 M

Waterbody ID Number: 3

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
149	29-May-01	11.24	8.31	9.91		20	11.15
150	30-May-01	10.93	7.53	9.32		20	11.00
151	31-May-01	13.41	9.07	10.92		20	11.29
152	1-Jun-01	12.94	9.84	11.60		20	11.60
153	2-Jun-01	13.25	10.63	11.83		20	11.93
154	3-Jun-01	12.01	8.61	9.55		20	12.12
155	4-Jun-01	8.31	6.29	7.15		20	11.73
156	5-Jun-01	8.15	6.29	7.18		20	11.29
157	6-Jun-01	10.63	7.53	8.65		20	11.24
158	7-Jun-01	10.47	7.99	9.39		20	10.82
159	8-Jun-01	12.63	8.61	10.42		20	10.78
160	9-Jun-01	13.25	10.01	11.72		20	10.78
161	10-Jun-01	13.25	10.01	11.66		20	10.96
162	11-Jun-01	12.48	10.32	11.53		20	11.55
163	12-Jun-01	11.09	8.77	9.53		20	11.97
164	13-Jun-01	9.23	6.61	7.87		20	11.77
165	14-Jun-01	9.84	6.76	8.41		20	11.68
166	15-Jun-01	13.25	7.84	10.08		20	11.77
167	16-Jun-01	14.33	9.38	11.79		20	11.92
168	17-Jun-01	14.81	11.24	12.93		20	12.15
169	18-Jun-01	14.33	10.16	12.32		20	12.41
170	19-Jun-01	14.97	10.01	12.37		20	12.97
171	20-Jun-01	16.08	10.78	13.30		20	13.94
172	21-Jun-01	16.87	12.32	14.61		20	14.95
173	22-Jun-01	18.15	13.25	15.64		20	15.65
174	23-Jun-01	18.15	13.71	15.91		20	16.19
175	24-Jun-01	17.67	13.41	15.64		20	16.60
176	25-Jun-01	16.23	12.32	14.41		20	16.87
177	26-Jun-01	17.18	12.94	14.93		20	17.19
178	27-Jun-01	16.71	13.56	15.10		20	17.28
179	28-Jun-01	18.31	12.94	15.19		20	17.49
180	29-Jun-01	18.96	13.56	16.08		20	17.60
181	30-Jun-01	18.15	14.65	16.51		20	17.60
182	1-Jul-01	19.93	14.02	16.82		20	17.92
183	2-Jul-01	20.74	15.44	18.06		20	18.57
184	3-Jul-01	21.24	16.23	18.67		20	19.15
185	4-Jul-01	20.41	17.02	18.52		20	19.68
186	5-Jul-01	19.28	16.71	17.68		20	19.82
187	6-Jul-01	18.96	14.49	16.51		20	19.82
188	7-Jul-01	18.47	15.76	17.25		20	19.86
189	8-Jul-01	18.63	15.13	16.62		20	19.68
190	9-Jul-01	18.47	15.92	17.23		20	19.35
191	10-Jul-01	19.93	14.97	17.13		20	19.16
192	11-Jul-01	19.44	16.71	18.14		20	19.03
193	12-Jul-01	19.93	16.08	17.93		20	19.12
194	13-Jul-01	19.28	16.08	17.86		20	19.16
195	14-Jul-01	19.12	15.60	17.55		20	19.26
196	15-Jul-01	18.31	16.08	16.99		20	19.21
197	16-Jul-01	16.71	14.49	15.63		20	18.96

Import File : ... way\Selway 2001\Temp\Big Creek 2001-00.txt
Calibration Factor : 0.1

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Big Creek

Data Collection Site: ~1km above mouth

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060206

HUC4 Name: Lower Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1050 M

Waterbody ID Number: 3

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
198	17-Jul-01	16.08	13.71	14.85		20	18.41
199	18-Jul-01	15.92	13.25	14.52		20	17.91
200	19-Jul-01	18.15	13.09	15.30		20	17.65
201	20-Jul-01	17.99	14.97	16.51		20	17.47
202	21-Jul-01	18.63	14.65	16.64		20	17.40
203	22-Jul-01	19.44	15.28	17.28		20	17.56
204	23-Jul-01	19.61	15.44	17.55		20	17.97
205	24-Jul-01	20.09	15.60	17.84		20	18.55
206	25-Jul-01	20.58	16.55	18.53		20	19.21
207	26-Jul-01	20.41	16.71	18.78		20	19.54
208	27-Jul-01	20.09	16.71	18.57		20	19.84
209	28-Jul-01	19.93	16.55	17.87		20	20.02
210	29-Jul-01	17.99	14.97	16.59		20	19.81
211	30-Jul-01	17.34	14.97	15.78		20	19.49
212	31-Jul-01	16.23	13.25	14.48		20	18.94
213	1-Aug-01	17.51	13.25	15.08		20	18.50
214	2-Aug-01	18.96	14.81	16.71		20	18.29
215	3-Aug-01	18.96	16.23	17.67		20	18.13
216	4-Aug-01	18.96	16.87	17.97		20	17.99
217	5-Aug-01	19.61	15.92	17.65		20	18.22
218	6-Aug-01	20.41	16.87	18.52		20	18.66
219	7-Aug-01	20.25	17.51	18.83		20	19.24
220	8-Aug-01	20.91	17.34	18.90		20	19.72
221	9-Aug-01	20.74	17.51	19.06		20	19.98
222	10-Aug-01	20.25	17.02	18.76		20	20.16
223	11-Aug-01	20.25	17.34	18.53		20	20.35
224	12-Aug-01	19.28	16.55	18.03		20	20.30
225	13-Aug-01	19.12	17.18	18.16		20	20.11
226	14-Aug-01	18.63	16.08	17.32		20	19.88
227	15-Aug-01	19.44	16.55	17.91		20	19.67
228	16-Aug-01	19.77	16.71	18.19		20	19.53
229	17-Aug-01	19.61	16.71	18.24		20	19.44
230	18-Aug-01	19.44	16.55	18.06		20	19.33
231	19-Aug-01	19.28	16.23	17.76		20	19.33
232	20-Aug-01	19.12	15.76	17.27		20	19.33
233	21-Aug-01	18.31	15.28	16.81		20	19.28
234	22-Aug-01	17.99	15.13	16.68		20	19.07
235	23-Aug-01	17.83	15.13	16.50		20	18.80
236	24-Aug-01	18.31	15.28	16.68		20	18.61
237	25-Aug-01	18.80	15.28	16.95		20	18.52
238	26-Aug-01	19.12	15.92	17.54		20	18.50
239	27-Aug-01	19.61	16.39	17.94		20	18.57
240	28-Aug-01	19.61	16.55	18.11		20	18.75
241	29-Aug-01	19.12	15.76	17.45		20	18.91
242	30-Aug-01	18.96	15.92	17.46		20	19.08
243	31-Aug-01	18.31	16.08	17.14		20	19.08
244	1-Sep-01	17.83	15.60	16.88		20	18.94
245	2-Sep-01	18.15	15.28	16.72		20	18.80
246	3-Sep-01	18.15	15.28	16.74		20	18.59

Import File : ... way\Selway 2001\Temp\Big Creek 2001-00.txt
Calibration Factor : 0.1

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Big Creek

Data Collection Site: ~1km above mouth

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060206

HUC4 Name: Lower Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1050 M

Waterbody ID Number: 3

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
247	4-Sep-01	18.15	15.28	16.48		20	18.38
248	5-Sep-01	16.87	14.97	15.93		20	18.06
249	6-Sep-01	15.76	12.17	13.17		20	17.60
250	7-Sep-01	12.94	11.39	12.11		20	16.84
251	8-Sep-01	13.56	10.32	11.71		20	16.23
252	9-Sep-01	14.18	10.93	12.38		20	15.66
253	10-Sep-01	14.97	11.55	13.06		20	15.20
254	11-Sep-01	15.44	12.63	13.94		20	14.82
255	12-Sep-01	15.76	13.25	14.39		20	14.66
256	13-Sep-01	17.18	14.65	15.63		20	14.86
257	14-Sep-01	17.34	14.97	16.07		20	15.49
258	15-Sep-01	17.18	14.33	15.62		20	16.01
259	16-Sep-01	16.55	14.18	15.38		20	16.35
260	17-Sep-01	16.08	13.56	14.80		20	16.50
261	18-Sep-01	15.60	12.94	14.05		20	16.53
262	19-Sep-01	15.13	12.48	13.66		20	16.44
263	20-Sep-01	14.33	11.39	12.70		11	16.03
264	21-Sep-01	12.32	10.93	11.56		20	15.31
265	22-Sep-01	10.78	7.69	8.91		20	14.40
266	23-Sep-01	8.92	5.52	7.14		20	13.31
267	24-Sep-01	8.77	5.05	6.72		20	12.26
268	25-Sep-01	9.53	5.52	7.11		20	11.40
269	26-Sep-01	10.16	6.45	8.01		20	10.69
270	27-Sep-01	10.16	6.76	8.28		20	10.09
271	28-Sep-01	10.01	7.07	8.47		20	9.76
272	29-Sep-01	10.01	7.84	8.90		20	9.65
273	30-Sep-01	10.47	8.77	9.48		20	9.87
274	1-Oct-01	12.01	10.16	10.92		20	10.34
275	2-Oct-01	11.71	9.07	10.24		20	10.65
276	3-Oct-01	9.84	7.53	8.72		20	10.60
277	4-Oct-01	9.23	6.45	7.73		20	10.47
278	5-Oct-01	8.15	5.52	6.66		20	10.20
279	6-Oct-01	6.92	4.27	5.51		20	9.76
280	7-Oct-01	6.76	3.80	5.07		20	9.23
281	8-Oct-01	7.07	4.11	5.27		20	8.53
282	9-Oct-01	7.53	4.42	5.67		20	7.93
283	10-Oct-01	8.46	6.14	6.98		20	7.73
284	11-Oct-01	8.61	7.22	7.92		20	7.64
285	12-Oct-01	8.31	7.38	7.72		20	7.67
286	13-Oct-01	7.22	6.29	6.68		20	7.71
287	14-Oct-01	8.15	6.14	6.85		20	7.91
288	15-Oct-01	8.15	6.45	7.05		20	8.06
289	16-Oct-01	7.22	5.21	6.23		20	8.02
290	17-Oct-01	7.07	5.05	5.91		20	7.82
291	18-Oct-01	6.92	4.89	5.74		20	7.58
292	19-Oct-01	7.84	6.14	6.77		20	7.51
293	20-Oct-01	7.84	5.98	6.78		20	7.60
294	21-Oct-01	7.84	6.45	7.28		20	7.55
295	22-Oct-01	6.14	3.80	4.66		20	7.27
296	23-Oct-01	3.96	2.38	3.14		20	6.80

Import File : ... way\Selway 2001\Temp\Big Creek 2001-00.txt

Calibration Factor : 0.1

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Big Creek

Data Collection Site: ~1km above mouth

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060206

HUC4 Name: Lower Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1050 M

Waterbody ID Number: 3

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
297	24-Oct-01	3.48	1.76	2.52		20	6.29
298	25-Oct-01	3.64	1.91	2.64		20	5.82
299	26-Oct-01	4.74	2.54	3.39		20	5.38
300	27-Oct-01	6.14	4.42	5.05		20	5.13
301	28-Oct-01	6.14	4.58	5.34		20	4.89
302	29-Oct-01	6.45	5.67	5.99		21	4.94
303	30-Oct-01	5.98	5.36	5.74		20	5.22
304	31-Oct-01	5.83	5.21	5.50		20	5.56
305	1-Nov-01	5.21	3.80	4.58		20	5.78
306	2-Nov-01	3.48	1.76	2.36		20	5.60
307	3-Nov-01	1.60	0.48	1.02		20	4.96
308	4-Nov-01	1.91	0.16	0.95		20	4.35
309	5-Nov-01	2.70	1.60	2.05		20	3.82
310	6-Nov-01	2.54	1.91	2.23		20	3.32
311	7-Nov-01	2.23	0.96	1.50		20	2.81
312	8-Nov-01	0.81	0.00	0.46		20	2.18
313	9-Nov-01	1.28	0.00	0.56		20	1.87
314	10-Nov-01	0.32	0.00	0.04		20	1.68
315	11-Nov-01	0.32	0.00	0.09		20	1.46
316	12-Nov-01	0.48	0.00	0.12		20	1.14
317	13-Nov-01	0.00	0.00	0.00		20	0.78
318	14-Nov-01	0.00	-0.16	-0.05		20	0.46
319	15-Nov-01	0.00	0.00	0.00		20	0.34
320	16-Nov-01	0.00	0.00	0.00		20	0.16
321	17-Nov-01	0.00	0.00	0.00		20	0.11
322	18-Nov-01	0.00	0.00	0.00		20	0.07
323	19-Nov-01	0.00	0.00	0.00		20	0.00
324	20-Nov-01	0.00	0.00	0.00		20	0.00
325	21-Nov-01	0.00	0.00	0.00		20	0.00
326	22-Nov-01	0.00	0.00	0.00		20	0.00
327	23-Nov-01	0.16	0.00	0.01		20	0.02
328	24-Nov-01	0.16	0.00	0.07		20	0.05
329	25-Nov-01	0.00	0.00	0.00		20	0.05
330	26-Nov-01	0.00	0.00	0.00		20	0.05
331	27-Nov-01	0.16	0.00	0.01		20	0.07
332	28-Nov-01	0.00	0.00	0.00		20	0.07
333	29-Nov-01	0.16	0.00	0.07		20	0.09
334	30-Nov-01	0.00	0.00	0.00		20	0.07
335	1-Dec-01	0.00	0.00	0.00		20	0.05
336	2-Dec-01	0.16	0.00	0.04		20	0.07
337	3-Dec-01	0.16	0.00	0.09		20	0.09
338	4-Dec-01	0.16	0.00	0.05		20	0.09
339	5-Dec-01	0.00	0.00	0.00		20	0.09
340	6-Dec-01	0.00	0.00	0.00		20	0.07
341	7-Dec-01	0.00	0.00	0.00		20	0.07
342	8-Dec-01	0.00	0.00	0.00		20	0.07
343	9-Dec-01	0.00	0.00	0.00		20	0.05
344	10-Dec-01	0.00	0.00	0.00		20	0.02
345	11-Dec-01	0.00	0.00	0.00		20	0.00
346	12-Dec-01	0.00	0.00	0.00		20	0.00
347	13-Dec-01	0.16	0.00	0.01		20	0.02

Import File : ... way\Selway 2001\Temp\Big Creek 2001-00.txt
Calibration Factor : 0.1

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Big Creek

Data Collection Site: ~1km above mouth

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060206

HUC4 Name: Lower Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1050 M

Waterbody ID Number: 3

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
348	14-Dec-01	0.00	0.00	0.00		20	0.02
349	15-Dec-01	0.00	0.00	0.00		20	0.02
350	16-Dec-01	0.00	0.00	0.00		20	0.02
351	17-Dec-01	0.00	0.00	0.00		20	0.02
352	18-Dec-01	0.00	0.00	0.00		20	0.02
353	19-Dec-01	0.00	0.00	0.00		20	0.02
354	20-Dec-01	0.00	0.00	0.00		20	0.00
355	21-Dec-01	0.00	0.00	0.00		20	0.00
356	22-Dec-01	0.00	0.00	0.00		20	0.00
357	23-Dec-01	0.00	0.00	0.00		20	0.00
358	24-Dec-01	0.00	0.00	0.00		20	0.00
359	25-Dec-01	0.16	0.00	0.05		20	0.02
360	26-Dec-01	0.00	0.00	0.00		20	0.02
361	27-Dec-01	0.00	0.00	0.00		20	0.02
362	28-Dec-01	0.00	0.00	0.00		20	0.02
363	29-Dec-01	0.00	0.00	0.00		20	0.02
364	30-Dec-01	0.00	0.00	0.00		20	0.02
365	31-Dec-01	0.00	0.00	0.00		20	0.02

Import File : ... way\Selway 2001\Temp\Big Creek 2001-00.txt

Calibration Factor : 0.1

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Indian Creek

Data Collection Site: near mouth

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060205

HUC4 Name: Upper Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1403 M

Waterbody ID Number: 6

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S-spawn	Nbr of Msrmts per day	7-Day Average of High
1	1-Jan-01	0.00	0.00	0.00		20	
2	2-Jan-01	0.00	0.00	0.00		20	
3	3-Jan-01	0.00	0.00	0.00		20	
4	4-Jan-01	0.00	0.00	0.00		20	
5	5-Jan-01	0.00	0.00	0.00		20	
6	6-Jan-01	0.00	0.00	0.00		20	
7	7-Jan-01	0.00	0.00	0.00		20	0.00
8	8-Jan-01	0.00	0.00	0.00		20	0.00
9	9-Jan-01	0.00	0.00	0.00		20	0.00
10	10-Jan-01	0.00	0.00	0.00		20	0.00
11	11-Jan-01	0.00	0.00	0.00		20	0.00
12	12-Jan-01	0.16	0.00	0.06		20	0.02
13	13-Jan-01	0.16	0.00	0.03		20	0.05
14	14-Jan-01	0.16	0.00	0.05		20	0.07
15	15-Jan-01	0.16	0.00	0.01		20	0.09
16	16-Jan-01	0.00	0.00	0.00		20	0.09
17	17-Jan-01	0.00	0.00	0.00		20	0.09
18	18-Jan-01	0.00	0.00	0.00		20	0.09
19	19-Jan-01	0.16	0.00	0.02		20	0.09
20	20-Jan-01	0.00	0.00	0.00		20	0.07
21	21-Jan-01	0.16	0.00	0.02		20	0.07
22	22-Jan-01	0.16	0.00	0.06		20	0.07
23	23-Jan-01	0.16	0.00	0.07		20	0.09
24	24-Jan-01	0.16	0.00	0.06		20	0.11
25	25-Jan-01	0.16	0.00	0.09		20	0.14
26	26-Jan-01	0.48	0.00	0.22		20	0.18
27	27-Jan-01	0.00	0.00	0.00		20	0.18
28	28-Jan-01	0.00	0.00	0.00		20	0.16
29	29-Jan-01	0.00	0.00	0.00		20	0.14
30	30-Jan-01	0.00	0.00	0.00		20	0.11
31	31-Jan-01	0.00	0.00	0.00		20	0.09
32	1-Feb-01	0.16	0.00	0.04		20	0.09
33	2-Feb-01	0.16	0.00	0.06		20	0.05
34	3-Feb-01	0.48	0.00	0.19		20	0.11
35	4-Feb-01	1.28	0.32	0.73		20	0.30
36	5-Feb-01	1.59	0.80	1.11		20	0.52
37	6-Feb-01	1.28	0.32	0.75		20	0.71
38	7-Feb-01	0.64	0.00	0.29		20	0.80
39	8-Feb-01	0.00	0.00	0.00		20	0.78
40	9-Feb-01	0.00	0.00	0.00		20	0.75
41	10-Feb-01	0.00	0.00	0.00		20	0.68
42	11-Feb-01	0.16	0.00	0.01		20	0.52
43	12-Feb-01	0.16	0.00	0.02		20	0.32
44	13-Feb-01	0.00	0.00	0.00		20	0.14
45	14-Feb-01	0.00	0.00	0.00		20	0.05
46	15-Feb-01	0.16	0.00	0.06		20	0.07
47	16-Feb-01	0.32	0.00	0.12		20	0.11

Import File : ... way\Selway 2001\Temp\Indian Creek 2001.txt

Calibration Factor : 0

Idaho Cold Water Aquatic Life Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
22 °C Instantaneous	9	10%	
19 °C Average	0	0%	
Days Evaluated & Date Range	92	22-Jun	21-Sep

Idaho Salmonid Spawning Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Instantaneous Spring	45	49%	
9 °C Average Spring	47	51%	
Spring Days Eval'd w/in Dates	92	15-Apr	15-Jul
13 °C Instantaneous Fall	50	54%	
9 °C Average Fall	49	53%	
Fall Days Eval'd w/in Dates	93	15-Aug	15-Nov
13 °C Instantaneous Total *	95	51%	
9 °C Average Total *	96	52%	
Tot Days Eval'd w/in Both Dates *	185		
* If spring & fall dates overlap double counting may occur.			

Idaho Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Juvnl Rearing MWMT (J)	85	92%	
Juvenile Days Eval'd w/in Dates	92	1-Jun	31-Aug
9 °C Spawning Daily Ave (S)	32	52%	
Spawning Days Eval'd w/in Dates	61	1-Sep	31-Oct

NOTES

Comments: Combined data from two deployments. Stream is *a priori* natural. Monitored as state Outstanding Resource Water nominee. Temperature exceeds Idaho's cold water aquatic life criteria less than 10% of the critical summer period.

DEQ Summary of Temperature Data

Data Source: DEQ
Water Body: Indian Creek
Data Collection Site: near mouth
Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060205
HUC4 Name: Upper Middle Fork Salmon
South of the Salmon Clearwater Divide
Idaho Bull Trout Elevation: 1403 M
Waterbody ID Number: 6

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
48	17-Feb-01	1.76	0.32	0.87		20	0.37
49	18-Feb-01	1.76	0.48	0.96		20	0.59
50	19-Feb-01	2.07	0.64	1.21		20	0.87
51	20-Feb-01	1.43	0.80	1.16		20	1.07
52	21-Feb-01	2.23	1.12	1.57		20	1.39
53	22-Feb-01	2.39	1.12	1.56		20	1.71
54	23-Feb-01	1.76	0.32	0.96		20	1.91
55	24-Feb-01	1.76	0.00	0.59		20	1.91
56	25-Feb-01	1.28	0.00	0.32		20	1.85
57	26-Feb-01	0.96	0.00	0.18		20	1.69
58	27-Feb-01	0.00	0.00	0.00		20	1.48
59	28-Feb-01	0.00	0.00	0.00		20	1.16
60	1-Mar-01	0.00	0.00	0.00		20	0.82
61	2-Mar-01	0.16	0.00	0.08		20	0.59
62	3-Mar-01	2.07	0.00	0.73		20	0.64
63	4-Mar-01	2.39	0.32	1.20		20	0.80
64	5-Mar-01	2.86	1.28	1.76		20	1.07
65	6-Mar-01	3.49	0.48	1.66		20	1.57
66	7-Mar-01	3.33	0.32	1.40		20	2.04
67	8-Mar-01	3.18	0.16	1.38		20	2.50
68	9-Mar-01	3.18	0.96	1.88		20	2.93
69	10-Mar-01	4.58	1.59	2.57		20	3.29
70	11-Mar-01	4.43	1.43	2.53		20	3.58
71	12-Mar-01	5.05	1.91	3.00		20	3.89
72	13-Mar-01	4.58	0.96	2.50		20	4.05
73	14-Mar-01	4.27	1.28	2.40		20	4.18
74	15-Mar-01	3.02	0.00	1.35		20	4.16
75	16-Mar-01	4.12	1.12	2.35		20	4.29
76	17-Mar-01	4.12	0.96	2.36		20	4.23
77	18-Mar-01	5.05	1.76	3.20		20	4.32
78	19-Mar-01	5.36	2.71	3.76		20	4.36
79	20-Mar-01	7.07	2.23	4.03		20	4.72
80	21-Mar-01	7.22	1.59	3.64		20	5.14
81	22-Mar-01	7.22	0.96	3.42		20	5.74
82	23-Mar-01	6.92	1.59	3.78		20	6.14
83	24-Mar-01	7.22	2.23	4.47		20	6.58
84	25-Mar-01	5.83	3.18	4.21		20	6.69
85	26-Mar-01	5.52	2.54	3.89		20	6.71
86	27-Mar-01	6.61	0.64	3.26		20	6.65
87	28-Mar-01	7.99	2.54	4.69		20	6.76
88	29-Mar-01	9.23	3.18	5.44		20	7.05
89	30-Mar-01	8.46	3.33	4.93		20	7.27
90	31-Mar-01	5.36	1.43	3.54		20	7.00
91	1-Apr-01	8.46	2.71	5.13		19	7.38
92	2-Apr-01	5.67	2.07	3.78		20	7.40
93	3-Apr-01	7.38	0.48	3.15		20	7.51
94	4-Apr-01	9.38	1.12	3.96		20	7.71
95	5-Apr-01	9.23	0.48	3.83		20	7.71
96	6-Apr-01	5.05	1.76	3.33		20	7.22
97	7-Apr-01	4.89	1.91	3.30		20	7.15

Import File : ... way\Selway 2001\Temp\Indian Creek 2001.txt
Calibration Factor : 0

STATISTICS	
Maximum Daily Maximum (MDM)	23.6 °C
Maximum 7-Day Maximum (MWM)	22.1 °C
Maximum Daily Average (MDA)	17.3 °C
Maximum 7-Day Average (MWA)	16.5 °C
Mean Daily Maximum	9.3 °C
Mean Daily Average	6.6 °C
Mean Daily Minimum	4.7 °C
Minimum 7-Day Minimum	0.0 °C
Minimum Daily Minimum	0.0 °C
Mean of all Data	6.6 °C

EPA Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
10 °C 7-Day Avg of Daily Max	122	100%	
Nmbr of 7-Day Avg's w/in Dates	122	1-Jun	30-Sep

Seasonal Cold Water Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
26 °C Instantaneous	0	0%	
23 °C Average	0	0%	
Days Evaluated and Date Range	92	22-Jun	21-Sep

DEQ Summary of Temperature Data

Data Source: DEQ
Water Body: Indian Creek
Data Collection Site: near mouth
Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060205
HUC4 Name: Upper Middle Fork Salmon
South of the Salmon Clearwater Divide
Idaho Bull Trout Elevation: 1403 M
Waterbody ID Number: 6

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
98	8-Apr-01	3.81	2.07	3.00		20	6.49
99	9-Apr-01	6.61	0.32	2.90		20	6.62
100	10-Apr-01	6.76	0.16	3.16		20	6.53
101	11-Apr-01	5.98	1.76	3.36		20	6.05
102	12-Apr-01	6.61	2.54	3.99		20	5.67
103	13-Apr-01	5.67	2.07	3.60		20	5.76
104	14-Apr-01	9.38	1.12	4.54		20	6.40
105	15-Apr-01	8.30	1.43	4.68		20	7.04
106	16-Apr-01	10.47	2.07	5.70		20	7.60
107	17-Apr-01	11.70	3.18	6.76		20	8.30
108	18-Apr-01	10.77	3.33	6.63		20	8.99
109	19-Apr-01	7.84	3.96	5.70		20	9.16
110	20-Apr-01	6.92	3.81	5.15		20	9.34
111	21-Apr-01	7.22	3.02	4.90		20	9.03
112	22-Apr-01	8.30	2.39	5.20		20	9.03
113	23-Apr-01	7.53	3.96	5.54		20	8.61
114	24-Apr-01	12.63	3.49	7.34		20	8.74
115	25-Apr-01	12.94	4.12	7.86		20	9.05
116	26-Apr-01	10.31	4.58	7.30		20	9.41
117	27-Apr-01	10.31	5.05	7.54		20	9.89
118	28-Apr-01	8.14	4.43	6.14		20	10.02
119	29-Apr-01	8.30	3.33	5.71		20	10.02
120	30-Apr-01	7.22	4.74	5.86		20	9.98
121	1-May-01	7.84	3.49	5.14		20	9.29
122	2-May-01	6.45	2.54	4.26		20	8.37
123	3-May-01	10.77	2.07	5.62		20	8.43
124	4-May-01	12.01	3.33	7.08		20	8.68
125	5-May-01	12.01	5.36	7.92		20	9.23
126	6-May-01	10.62	3.02	6.26		20	9.56
127	7-May-01	11.86	3.33	6.99		20	10.22
128	8-May-01	10.47	4.58	7.37		20	10.60
129	9-May-01	10.00	5.05	7.35		20	11.11
130	10-May-01	11.54	3.96	7.18		20	11.22
131	11-May-01	11.70	4.12	7.55		20	11.17
132	12-May-01	12.16	5.05	8.21		20	11.19
133	13-May-01	11.70	6.14	8.33		20	11.35
134	14-May-01	9.69	5.67	7.47		20	11.04
135	15-May-01	7.53	5.52	6.61		20	10.62
136	16-May-01	9.84	5.67	7.10		20	10.59
137	17-May-01	9.53	3.81	6.53		20	10.31
138	18-May-01	11.39	5.67	7.88		20	10.26
139	19-May-01	10.31	4.89	7.43		20	10.00
140	20-May-01	11.08	5.36	7.72		20	9.91
141	21-May-01	11.86	3.81	7.39		20	10.22
142	22-May-01	13.56	5.36	8.93		20	11.08
143	23-May-01	13.40	6.29	9.66		20	11.59
144	24-May-01	13.24	7.07	9.87		20	12.12
145	25-May-01	12.47	7.38	9.85		20	12.27
146	26-May-01	12.78	7.38	9.88		20	12.63
147	27-May-01	12.16	7.68	9.58		20	12.78
148	28-May-01	13.56	7.07	9.84		20	13.02

Import File : ... way\Selway 2001\Temp\Indian Creek 2001.txt
Calibration Factor : 0

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Indian Creek

Data Collection Site: near mouth

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060205

HUC4 Name: Upper Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1403 M

Waterbody ID Number: 6

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
149	29-May-01	13.24	7.07	9.67		20	12.98
150	30-May-01	13.40	5.67	9.14		20	12.98
151	31-May-01	15.27	7.07	10.66		20	13.27
152	1-Jun-01	14.96	7.53	10.94	J	20	13.62
153	2-Jun-01	14.64	9.23	11.36	J	20	13.89
154	3-Jun-01	9.69	7.22	7.95	J	20	13.54
155	4-Jun-01	7.53	5.36	6.40		20	12.68
156	5-Jun-01	8.92	4.89	6.72		20	12.06
157	6-Jun-01	11.54	6.14	8.46		20	11.79
158	7-Jun-01	13.24	6.29	9.28		20	11.50
159	8-Jun-01	15.27	7.07	10.82		20	11.55
160	9-Jun-01	15.59	8.14	11.38		20	11.68
161	10-Jun-01	16.06	7.99	11.29		20	12.59
162	11-Jun-01	13.40	8.92	10.94	J	20	13.43
163	12-Jun-01	9.53	7.38	8.47	J	20	13.52
164	13-Jun-01	11.54	5.52	7.81	J	20	13.52
165	14-Jun-01	12.78	5.21	8.51	J	20	13.45
166	15-Jun-01	15.27	6.45	10.32	J	20	13.45
167	16-Jun-01	16.38	6.61	10.90	J	20	13.57
168	17-Jun-01	16.22	8.30	11.81	J	20	13.59
169	18-Jun-01	15.11	7.53	11.07	J	20	13.83
170	19-Jun-01	16.38	7.07	11.26	J	20	14.81
171	20-Jun-01	17.97	8.14	12.48	J	20	15.73
172	21-Jun-01	19.26	9.69	13.84	J	20	16.66
173	22-Jun-01	19.75	10.31	14.48	J	20	17.30
174	23-Jun-01	18.13	10.77	14.25	J	20	17.55
175	24-Jun-01	19.10	10.47	14.26	J	20	17.96
176	25-Jun-01	16.85	9.38	12.76	J	20	18.21
177	26-Jun-01	19.91	10.47	14.33	J	20	18.71
178	27-Jun-01	14.96	10.93	13.29	J	20	18.28
179	28-Jun-01	19.75	11.54	14.79	J	20	18.35
180	29-Jun-01	20.07	10.62	14.90	J	20	18.40
181	30-Jun-01	18.94	11.24	14.73	J	20	18.51
182	1-Jul-01	21.38	11.24	15.75	J	20	18.84
183	2-Jul-01	21.71	12.01	16.41	J	20	19.53
184	3-Jul-01	21.88	12.16	16.62	J	20	19.81
185	4-Jul-01	19.59	13.86	16.48	J	20	20.47
186	5-Jul-01	19.59	14.48	16.72	J	20	20.45
187	6-Jul-01	20.56	12.94	16.42	J	20	20.52
188	7-Jul-01	17.17	12.63	15.13	J	20	20.27
189	8-Jul-01	18.29	13.40	15.50	J	20	19.83
190	9-Jul-01	18.45	12.94	15.03	J	20	19.36
191	10-Jul-01	21.05	12.63	16.12	J	20	19.24
192	11-Jul-01	20.07	13.86	16.51	J	20	19.31
193	12-Jul-01	21.54	12.94	16.88	J	20	19.59
194	13-Jul-01	20.23	12.78	16.39	J	20	19.54
195	14-Jul-01	19.75	12.32	16.17	J	20	19.91
196	15-Jul-01	17.64	12.94	15.33	J	20	19.82
197	16-Jul-01	17.33	12.16	14.52	J	20	19.66

Import File : ... way\Selway 2001\Temp\Indian Creek 2001.txt
Calibration Factor : 0

DEQ Summary of Temperature Data

Data Source: DEQ
Water Body: Indian Creek
Data Collection Site: near mouth
Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060205
HUC4 Name: Upper Middle Fork Salmon
South of the Salmon Clearwater Divide
Idaho Bull Trout Elevation: 1403 M
Waterbody ID Number: 6

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
198	17-Jul-01	16.38	10.16	13.22	J	20	18.99
199	18-Jul-01	17.17	10.00	13.08	J	20	18.58
200	19-Jul-01	20.39	9.38	14.23	J	20	18.41
201	20-Jul-01	18.77	11.39	15.10	J	20	18.20
202	21-Jul-01	20.88	10.77	15.26	J	20	18.37
203	22-Jul-01	21.38	10.31	15.08	J	20	18.90
204	23-Jul-01	20.72	11.24	15.42	J	20	19.38
205	24-Jul-01	22.38	11.08	16.11	J	20	20.24
206	25-Jul-01	22.71	11.39	16.40	J	20	21.03
207	26-Jul-01	22.54	11.70	16.47	J	20	21.34
208	27-Jul-01	21.54	10.93	15.84	J	20	21.74
209	28-Jul-01	20.23	11.08	15.25	J	20	21.64
210	29-Jul-01	20.23	10.16	14.59	J	20	21.48
211	30-Jul-01	14.96	12.78	13.52	J	20	20.66
212	31-Jul-01	18.29	10.62	13.46	J	20	20.07
213	1-Aug-01	19.75	9.07	13.85	J	20	19.65
214	2-Aug-01	22.21	10.62	15.70	J	20	19.60
215	3-Aug-01	20.23	11.54	15.54	J	20	19.41
216	4-Aug-01	21.21	12.78	16.22	J	20	19.55
217	5-Aug-01	22.21	10.93	15.80	J	20	19.84
218	6-Aug-01	23.21	11.54	16.61	J	20	21.02
219	7-Aug-01	21.21	12.32	16.43	J	20	21.43
220	8-Aug-01	23.55	12.63	17.33	J	20	21.98
221	9-Aug-01	20.72	12.01	16.03	J	20	21.76
222	10-Aug-01	22.38	12.16	16.62	J	20	22.07
223	11-Aug-01	21.54	12.78	16.57	J	20	22.12
224	12-Aug-01	21.05	12.01	16.08	J	20	21.95
225	13-Aug-01	20.39	12.47	15.89	J	20	21.55
226	14-Aug-01	19.10	12.16	15.53	J	20	21.25
227	15-Aug-01	19.75	12.94	16.09	J	20	20.70
228	16-Aug-01	21.54	11.70	15.95	J	20	20.82
229	17-Aug-01	22.38	11.70	16.34	J	20	20.82
230	18-Aug-01	21.88	11.54	16.14	J	20	20.87
231	19-Aug-01	21.38	11.24	15.63	J	20	20.92
232	20-Aug-01	20.07	9.69	14.35	J	20	20.87
233	21-Aug-01	20.07	10.16	14.53	J	20	21.01
234	22-Aug-01	19.59	10.00	14.38	J	20	20.99
235	23-Aug-01	20.07	10.16	14.55	J	20	20.78
236	24-Aug-01	20.56	10.00	14.48	J	20	20.52
237	25-Aug-01	20.88	9.69	14.51	J	20	20.37
238	26-Aug-01	20.56	10.47	14.87	J	20	20.26
239	27-Aug-01	19.42	11.54	14.93	J	20	20.16
240	28-Aug-01	17.81	10.93	14.30	J	20	19.84
241	29-Aug-01	19.91	10.47	14.73	J	20	19.89
242	30-Aug-01	16.38	10.16	13.37	J	20	19.36
243	31-Aug-01	17.49	10.77	13.98	J	20	18.92
244	1-Sep-01	17.81	10.62	14.12	S	20	18.48
245	2-Sep-01	18.45	10.47	14.09	S	20	18.18
246	3-Sep-01	17.81	10.00	13.81	S	20	17.95

Import File : ... way\Selway 2001\Temp\Indian Creek 2001.txt
Calibration Factor : 0

DEQ Summary of Temperature Data

Data Source: DEQ
Water Body: Indian Creek
Data Collection Site: near mouth
Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060205
HUC4 Name: Upper Middle Fork Salmon
South of the Salmon Clearwater Divide
Idaho Bull Trout Elevation: 1403 M
Waterbody ID Number: 6

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
247	4-Sep-01	16.69	10.00	13.42	S	20	17.79
248	5-Sep-01	17.17	10.62	13.54	S	20	17.40
249	6-Sep-01	14.17	9.69	11.37	S	20	17.08
250	7-Sep-01	14.33	7.38	10.19	S	20	16.63
251	8-Sep-01	15.43	6.29	9.98	S	20	16.29
252	9-Sep-01	16.53	6.61	10.70	S	20	16.02
253	10-Sep-01	17.17	7.38	11.45	S	20	15.93
254	11-Sep-01	17.97	8.46	12.30	S	20	16.11
255	12-Sep-01	17.97	10.00	13.28	S	20	16.22
256	13-Sep-01	19.10	11.70	14.45	S	20	16.93
257	14-Sep-01	18.61	11.70	13.90	S	17	17.54
258	15-Sep-01	18.25	9.79	13.15	S	20	17.94
259	16-Sep-01	15.86	11.19	13.00	S	20	17.85
260	17-Sep-01	16.49	10.57	12.66	S	20	17.75
261	18-Sep-01	17.28	9.33	12.21	S	20	17.65
262	19-Sep-01	15.54	8.41	11.29	S	20	17.30
263	20-Sep-01	15.23	6.86	10.20	S	20	16.75
264	21-Sep-01	15.23	6.86	10.19	S	20	16.27
265	22-Sep-01	15.38	6.86	10.24	S	20	15.86
266	23-Sep-01	15.86	7.32	10.74	S	20	15.86
267	24-Sep-01	16.33	7.94	11.22	S	20	15.84
268	25-Sep-01	14.75	7.79	10.75	S	20	15.47
269	26-Sep-01	15.23	9.48	11.21	S	20	15.43
270	27-Sep-01	15.07	7.02	10.28	S	20	15.41
271	28-Sep-01	14.28	9.18	11.18	S	20	15.27
272	29-Sep-01	14.59	7.17	10.18	S	20	15.16
273	30-Sep-01	13.82	5.93	9.02	S	20	14.87
274	1-Oct-01	14.13	6.24	9.26	S	20	14.55
275	2-Oct-01	13.67	6.09	9.17	S	20	14.40
276	3-Oct-01	13.20	5.93	8.87		20	14.11
277	4-Oct-01	12.43	5.62	8.24		20	13.73
278	5-Oct-01	11.19	4.06	6.86		20	13.29
279	6-Oct-01	11.19	3.91	6.74		20	12.80
280	7-Oct-01	10.42	4.69	7.44		20	12.32
281	8-Oct-01	11.19	7.48	8.69		20	11.90
282	9-Oct-01	8.10	5.47	6.81		20	11.10
283	10-Oct-01	8.10	2.17	4.93		20	10.37
284	11-Oct-01	8.25	5.31	6.36		20	9.78
285	12-Oct-01	6.86	2.81	4.68		20	9.16
286	13-Oct-01	9.48	4.84	6.39		20	8.91
287	14-Oct-01	10.42	5.93	7.35		20	8.91
288	15-Oct-01	9.02	4.84	6.22		20	8.60
289	16-Oct-01	9.18	3.28	5.68		20	8.76
290	17-Oct-01	9.33	5.16	7.15		20	8.93
291	18-Oct-01	7.32	2.33	4.53		20	8.80
292	19-Oct-01	9.64	5.00	6.66		20	9.20
293	20-Oct-01	9.02	4.69	6.48		20	9.13
294	21-Oct-01	7.94	2.33	4.73		20	8.78
295	22-Oct-01	7.63	4.37	5.92		20	8.58
296	23-Oct-01	6.55	3.59	5.12		20	8.20

Import File : ... way\Selway 2001\Temp\Indian Creek 2001.txt
Calibration Factor : 0

DEQ Summary of Temperature Data

Data Source: DEQ
Water Body: Indian Creek
Data Collection Site: near mouth
Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060205
HUC4 Name: Upper Middle Fork Salmon
South of the Salmon Clearwater Divide
Idaho Bull Trout Elevation: 1403 M
Waterbody ID Number: 6

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
297	24-Oct-01	5.93	2.17	3.34		20	7.72
298	25-Oct-01	5.78	2.17	3.51		20	7.50
299	26-Oct-01	6.24	1.70	3.35		20	7.01
300	27-Oct-01	6.86	1.54	3.84		20	6.70
301	28-Oct-01	8.10	5.78	6.59		21	6.73
302	29-Oct-01	8.41	5.93	6.98		20	6.84
303	30-Oct-01	8.10	6.24	7.07		20	7.06
304	31-Oct-01	7.48	6.09	6.75		20	7.28
305	1-Nov-01	6.71	5.31	6.06		20	7.41
306	2-Nov-01	7.17	5.31	6.09		20	7.55
307	3-Nov-01	5.93	3.91	5.07		20	7.41
308	4-Nov-01	5.16	2.96	3.66		20	6.99
309	5-Nov-01	5.47	2.17	3.46		20	6.57
310	6-Nov-01	5.62	2.02	3.64		20	6.22
311	7-Nov-01	4.22	1.54	2.78		20	5.75
312	8-Nov-01	2.81	0.10	1.05		20	5.20
313	9-Nov-01	2.49	0.10	0.76		20	4.53
314	10-Nov-01	2.81	0.10	0.85		20	4.08
315	11-Nov-01	2.96	0.10	1.12		20	3.77
316	12-Nov-01	4.37	1.22	2.38		20	3.61
317	13-Nov-01	5.00	1.86	3.19		20	3.52
318	14-Nov-01	5.78	3.12	4.15		20	3.75
319	15-Nov-01	5.16	2.49	3.67		20	4.08
320	16-Nov-01	4.69	2.02	3.09		20	4.40
321	17-Nov-01	4.69	2.49	3.52		20	4.66
322	18-Nov-01	5.47	3.28	4.41		20	5.02
323	19-Nov-01	4.53	2.33	3.32		20	5.05
324	20-Nov-01	5.62	2.81	4.04		20	5.13
325	21-Nov-01	5.31	3.91	4.55		20	5.07
326	22-Nov-01	4.22	1.70	3.19		20	4.93
327	23-Nov-01	3.75	2.02	3.02		20	4.80
328	24-Nov-01	1.70	0.74	1.26		20	4.37
329	25-Nov-01	3.12	0.74	1.59		20	4.04
330	26-Nov-01	2.17	0.10	0.84		20	3.70
331	27-Nov-01	0.58	0.10	0.16		20	2.98
332	28-Nov-01	0.26	0.10	0.12		20	2.26
333	29-Nov-01	0.26	0.10	0.12		20	1.69
334	30-Nov-01	0.26	0.10	0.14		20	1.19
335	1-Dec-01	0.26	0.10	0.14		20	0.99
336	2-Dec-01	0.26	0.10	0.14		20	0.58
337	3-Dec-01	1.22	0.10	0.44		20	0.44
338	4-Dec-01	0.74	0.10	0.18		20	0.47
339	5-Dec-01	0.10	0.10	0.10		20	0.44
340	6-Dec-01	0.10	0.10	0.10		20	0.42
341	7-Dec-01	0.10	0.10	0.10		20	0.40
342	8-Dec-01	0.10	0.10	0.10		20	0.37
343	9-Dec-01	0.26	0.10	0.14		20	0.37
344	10-Dec-01	0.10	0.10	0.10		20	0.21
345	11-Dec-01	0.26	0.10	0.13		20	0.15
346	12-Dec-01	0.26	0.10	0.11		20	0.17
347	13-Dec-01	0.26	0.10	0.14		20	0.19

Import File : ... way\Selway 2001\Temp\Indian Creek 2001.txt
Calibration Factor : 0

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Indian Creek

Data Collection Site: near mouth

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060205

HUC4 Name: Upper Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1403 M

Waterbody ID Number: 6

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
348	14-Dec-01	0.26	0.10	0.24		20	0.21
349	15-Dec-01	0.10	0.10	0.10		20	0.21
350	16-Dec-01	0.26	0.10	0.16		20	0.21
351	17-Dec-01	0.26	0.10	0.24		20	0.24
352	18-Dec-01	0.26	0.10	0.11		20	0.24
353	19-Dec-01	0.26	0.10	0.20		20	0.24
354	20-Dec-01	0.26	0.10	0.22		20	0.24
355	21-Dec-01	0.26	0.10	0.16		20	0.24
356	22-Dec-01	0.10	0.10	0.10		20	0.24
357	23-Dec-01	0.26	0.10	0.23		20	0.24
358	24-Dec-01	0.26	0.10	0.20		20	0.24
359	25-Dec-01	0.26	0.10	0.12		20	0.24
360	26-Dec-01	0.26	0.10	0.20		20	0.24
361	27-Dec-01	0.10	0.10	0.10		20	0.21
362	28-Dec-01	0.10	0.10	0.10		20	0.19
363	29-Dec-01	0.10	0.10	0.10		20	0.19
364	30-Dec-01	0.10	0.10	0.10		20	0.17
365	31-Dec-01	0.10	0.10	0.10		20	0.15

Import File : ... way\Selway 2001\Temp\Indian Creek 2001.txt

Calibration Factor : 0

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: MF Salmon River abv Camas Cr.

Data Collection Site: right bank

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060206

HUC4 Name: Lower Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1163 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
1	1-Jan-01	0.00	0.00	0.00		20	
2	2-Jan-01	0.00	0.00	0.00		20	
3	3-Jan-01	0.00	0.00	0.00		20	
4	4-Jan-01	0.00	0.00	0.00		20	
5	5-Jan-01	0.00	0.00	0.00		20	
6	6-Jan-01	0.00	0.00	0.00		20	
7	7-Jan-01	0.00	0.00	0.00		20	0.00
8	8-Jan-01	0.00	0.00	0.00		20	0.00
9	9-Jan-01	0.00	0.00	0.00		20	0.00
10	10-Jan-01	0.00	0.00	0.00		20	0.00
11	11-Jan-01	0.00	0.00	0.00		20	0.00
12	12-Jan-01	0.00	0.00	0.00		20	0.00
13	13-Jan-01	0.00	0.00	0.00		20	0.00
14	14-Jan-01	0.00	0.00	0.00		20	0.00
15	15-Jan-01	0.00	0.00	0.00		20	0.00
16	16-Jan-01	0.00	0.00	0.00		20	0.00
17	17-Jan-01	0.00	0.00	0.00		20	0.00
18	18-Jan-01	0.00	0.00	0.00		20	0.00
19	19-Jan-01	0.00	0.00	0.00		20	0.00
20	20-Jan-01	0.00	0.00	0.00		20	0.00
21	21-Jan-01	0.00	0.00	0.00		20	0.00
22	22-Jan-01	0.00	0.00	0.00		20	0.00
23	23-Jan-01	0.00	0.00	0.00		20	0.00
24	24-Jan-01	0.00	0.00	0.00		20	0.00
25	25-Jan-01	0.00	0.00	0.00		20	0.00
26	26-Jan-01	0.00	0.00	0.00		20	0.00
27	27-Jan-01	0.00	0.00	0.00		20	0.00
28	28-Jan-01	0.00	0.00	0.00		20	0.00
29	29-Jan-01	0.00	0.00	0.00		20	0.00
30	30-Jan-01	0.00	0.00	0.00		20	0.00
31	31-Jan-01	0.00	0.00	0.00		20	0.00
32	1-Feb-01	0.00	0.00	0.00		20	0.00
33	2-Feb-01	0.00	0.00	0.00		20	0.00
34	3-Feb-01	0.00	0.00	0.00		20	0.00
35	4-Feb-01	0.00	0.00	0.00		20	0.00
36	5-Feb-01	0.00	0.00	0.00		20	0.00
37	6-Feb-01	0.00	0.00	0.00		20	0.00
38	7-Feb-01	0.00	0.00	0.00		20	0.00
39	8-Feb-01	0.00	0.00	0.00		20	0.00
40	9-Feb-01	0.00	0.00	0.00		20	0.00
41	10-Feb-01	0.00	0.00	0.00		20	0.00
42	11-Feb-01	0.00	0.00	0.00		20	0.00
43	12-Feb-01	0.00	0.00	0.00		20	0.00
44	13-Feb-01	0.00	0.00	0.00		20	0.00
45	14-Feb-01	0.00	0.00	0.00		20	0.00
46	15-Feb-01	0.00	0.00	0.00		20	0.00
47	16-Feb-01	0.00	0.00	0.00		20	0.00

Import File : ... 2001\Temp\MF Salmon abv Camas Cr 2001.txt

Calibration Factor : 0.09

Idaho Cold Water Aquatic Life Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
22 °C Instantaneous	7	8%	
19 °C Average	28	30%	
Days Evaluated & Date Range	92	22-Jun	21-Sep

Idaho Salmonid Spawning Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Instantaneous Spring	50	54%	
9 °C Average Spring	76	83%	
Spring Days Eval'd w/in Dates	92	15-Apr	15-Jul
13 °C Instantaneous Fall	47	51%	
9 °C Average Fall	55	59%	
Fall Days Eval'd w/in Dates	93	15-Aug	15-Nov
13 °C Instantaneous Total *	97	52%	
9 °C Average Total *	131	71%	
Tot Days Eval'd w/in Both Dates *	185		
* If spring & fall dates overlap double counting may occur.			

Idaho Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Juvnl Rearing MWMT (J)	0	0%	
Juvenile Days Eval'd w/in Dates	0	1-Jun	31-Aug
9 °C Spawning Daily Ave (S)	0	0%	
Spawning Days Eval'd w/in Dates	0	1-Sep	31-Oct

NOTES

Comments: Combined data from two deployments. Stream is *a priori* natural. Monitored as state Outstanding Resource Water nominee. Temperature exceeds Idaho's cold water aquatic life daily maximum criterion less than 10% of the critical summer period.

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: MF Salmon River abv Camas Cr.

Data Collection Site: right bank

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060206

HUC4 Name: Lower Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1163 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
48	17-Feb-01	0.00	0.00	0.00		20	0.00
49	18-Feb-01	0.00	0.00	0.00		20	0.00
50	19-Feb-01	0.00	0.00	0.00		20	0.00
51	20-Feb-01	0.00	0.00	0.00		20	0.00
52	21-Feb-01	0.00	0.00	0.00		20	0.00
53	22-Feb-01	0.00	0.00	0.00		20	0.00
54	23-Feb-01	0.00	0.00	0.00		20	0.00
55	24-Feb-01	0.00	0.00	0.00		20	0.00
56	25-Feb-01	0.00	0.00	0.00		20	0.00
57	26-Feb-01	0.00	0.00	0.00		20	0.00
58	27-Feb-01	0.00	0.00	0.00		20	0.00
59	28-Feb-01	0.00	0.00	0.00		20	0.00
60	1-Mar-01	0.00	0.00	0.00		20	0.00
61	2-Mar-01	0.00	0.00	0.00		20	0.00
62	3-Mar-01	0.17	0.00	0.07		20	0.02
63	4-Mar-01	0.33	0.00	0.13		20	0.07
64	5-Mar-01	0.97	0.17	0.47		20	0.21
65	6-Mar-01	1.92	0.17	0.93		20	0.48
66	7-Mar-01	2.24	0.17	1.13		20	0.80
67	8-Mar-01	2.71	0.65	1.67		20	1.19
68	9-Mar-01	3.34	2.55	2.91		20	1.67
69	10-Mar-01	5.05	3.03	3.75		20	2.37
70	11-Mar-01	4.28	3.34	3.77		20	2.93
71	12-Mar-01	4.74	3.34	3.98		20	3.47
72	13-Mar-01	5.05	3.34	4.27		20	3.92
73	14-Mar-01	4.90	3.65	4.12		20	4.30
74	15-Mar-01	3.65	2.08	2.95		20	4.43
75	16-Mar-01	4.12	2.39	3.21		20	4.54
76	17-Mar-01	4.59	2.24	3.45		20	4.48
77	18-Mar-01	5.21	3.49	4.38		20	4.61
78	19-Mar-01	6.45	4.90	5.59		20	4.85
79	20-Mar-01	7.85	5.52	6.59		20	5.25
80	21-Mar-01	7.85	5.05	6.55		20	5.67
81	22-Mar-01	7.54	4.74	6.32		20	6.23
82	23-Mar-01	7.69	5.05	6.46		20	6.74
83	24-Mar-01	8.00	5.68	6.94		20	7.23
84	25-Mar-01	7.38	6.30	6.89		20	7.54
85	26-Mar-01	6.92	5.83	6.39		20	7.60
86	27-Mar-01	6.30	3.97	5.31		20	7.38
87	28-Mar-01	7.85	5.05	6.22		20	7.38
88	29-Mar-01	9.23	6.14	7.54		20	7.62
89	30-Mar-01	9.08	6.77	7.81		20	7.82
90	31-Mar-01	7.85	5.68	6.68		20	7.80
91	1-Apr-01	8.15	5.52	6.79		19	7.91
92	2-Apr-01	7.54	5.83	6.52		20	8.00
93	3-Apr-01	6.14	3.34	4.92		20	7.98
94	4-Apr-01	7.69	4.28	5.81		20	7.95
95	5-Apr-01	7.85	4.12	5.92		20	7.76
96	6-Apr-01	7.08	5.52	6.28		20	7.47
97	7-Apr-01	6.30	4.90	5.45		20	7.25

Import File : ... 2001\Temp\MF Salmon abv Camas Cr 2001.txt

Calibration Factor : 0.09

STATISTICS	
Maximum Daily Maximum (MDM)	22.7 °C
Maximum 7-Day Maximum (MWM)	21.7 °C
Maximum Daily Average (MDA)	20.6 °C
Maximum 7-Day Average (MWA)	20.0 °C
Mean Daily Maximum	9.2 °C
Mean Daily Average	8.3 °C
Mean Daily Minimum	7.4 °C
Minimum 7-Day Minimum	0.0 °C
Minimum Daily Minimum	0.0 °C
Mean of all Data	8.3 °C

EPA Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
10 °C 7-Day Avg of Daily Max	122	100%	
Nmbr of 7-Day Avg's w/in Dates	122	1-Jun	30-Sep

Seasonal Cold Water Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
26 °C Instantaneous	0	0%	
23 °C Average	0	0%	
Days Evaluated and Date Range	92	22-Jun	21-Sep

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: MF Salmon River abv Camas Cr.

Data Collection Site: right bank

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060206

HUC4 Name: Lower Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1163 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
98	8-Apr-01	5.05	3.97	4.48		20	6.81
99	9-Apr-01	5.99	3.34	4.56		20	6.59
100	10-Apr-01	6.45	3.97	5.25		20	6.63
101	11-Apr-01	5.83	4.74	5.30		20	6.36
102	12-Apr-01	5.83	4.74	5.26		20	6.08
103	13-Apr-01	5.99	4.59	5.33		20	5.92
104	14-Apr-01	8.00	4.43	5.97		20	6.16
105	15-Apr-01	8.92	5.37	7.13		20	6.72
106	16-Apr-01	10.17	6.45	8.22		20	7.31
107	17-Apr-01	11.40	7.38	9.34		20	8.02
108	18-Apr-01	11.25	8.46	9.98		20	8.79
109	19-Apr-01	10.17	8.15	9.11		20	9.41
110	20-Apr-01	8.77	7.38	8.00		20	9.81
111	21-Apr-01	8.46	6.30	7.38		20	9.88
112	22-Apr-01	8.62	5.83	7.22		20	9.83
113	23-Apr-01	9.08	7.08	7.92		20	9.68
114	24-Apr-01	11.55	6.92	9.00		20	9.70
115	25-Apr-01	13.26	8.92	10.92		20	9.99
116	26-Apr-01	12.95	10.17	11.64		20	10.38
117	27-Apr-01	12.18	10.32	11.21		20	10.87
118	28-Apr-01	10.48	8.62	9.34		20	11.16
119	29-Apr-01	8.46	6.14	7.46		20	11.14
120	30-Apr-01	7.85	7.38	7.60		20	10.96
121	1-May-01	7.85	6.30	7.05		20	10.43
122	2-May-01	7.08	5.05	6.24		20	9.55
123	3-May-01	8.77	5.05	6.67		20	8.95
124	4-May-01	10.94	7.23	8.82		20	8.78
125	5-May-01	12.02	9.85	10.68		20	9.00
126	6-May-01	10.63	8.31	9.50		20	9.31
127	7-May-01	10.63	7.85	9.24		20	9.70
128	8-May-01	10.79	9.38	10.19		20	10.12
129	9-May-01	10.63	9.23	10.11		20	10.63
130	10-May-01	10.79	8.15	9.58		20	10.92
131	11-May-01	11.25	8.77	10.11		20	10.96
132	12-May-01	11.87	9.54	10.71		20	10.94
133	13-May-01	12.02	10.63	11.51		20	11.14
134	14-May-01	11.71	9.23	10.44		20	11.29
135	15-May-01	10.32	8.31	9.09		20	11.23
136	16-May-01	9.54	7.38	8.37		20	11.07
137	17-May-01	9.38	6.92	8.39		20	10.87
138	18-May-01	11.25	8.46	9.73		20	10.87
139	19-May-01	10.79	8.92	10.04		20	10.72
140	20-May-01	10.94	8.77	10.02		20	10.56
141	21-May-01	10.94	8.00	9.66		20	10.45
142	22-May-01	12.80	9.54	11.11		20	10.81
143	23-May-01	13.87	10.94	12.48		20	11.42
144	24-May-01	13.87	11.55	12.96		20	12.07
145	25-May-01	13.72	11.87	12.98		20	12.42
146	26-May-01	13.57	11.71	12.78		20	12.82

Import File : ... 2001\Temp\MF Salmon abv Camas Cr 2001.txt

Calibration Factor : 0.09

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: MF Salmon River abv Camas Cr.

Data Collection Site: right bank

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060206

HUC4 Name: Lower Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1163 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
147	27-May-01	13.10	11.55	12.57		20	13.12
148	28-May-01	13.57	10.94	12.43		20	13.50
149	29-May-01	13.57	11.09	12.58		20	13.61
150	30-May-01	13.10	10.63	12.05		20	13.50
151	31-May-01	14.81	11.87	13.20		20	13.63
152	1-Jun-01	15.13	12.95	14.16		20	13.84
153	2-Jun-01	15.29	13.72	14.39		20	14.08
154	3-Jun-01	14.03	10.32	12.16		20	14.21
155	4-Jun-01	10.17	8.62	9.12		20	13.73
156	5-Jun-01	8.62	7.54	8.14		20	13.02
157	6-Jun-01	12.02	8.62	9.85		20	12.87
158	7-Jun-01	13.26	10.32	11.57		20	12.65
159	8-Jun-01	15.45	11.71	13.33		20	12.69
160	9-Jun-01	16.55	13.57	14.75		20	12.87
161	10-Jun-01	16.24	13.26	14.73		20	13.19
162	11-Jun-01	15.29	13.57	14.43		20	13.92
163	12-Jun-01	13.87	10.63	12.18		20	14.67
164	13-Jun-01	11.09	8.92	9.90		20	14.54
165	14-Jun-01	12.02	9.23	10.56		20	14.36
166	15-Jun-01	14.81	10.32	12.28		20	14.27
167	16-Jun-01	16.08	12.02	13.89		20	14.20
168	17-Jun-01	16.87	13.26	14.95		20	14.29
169	18-Jun-01	16.55	12.80	14.56		20	14.47
170	19-Jun-01	16.71	12.49	14.54		20	14.88
171	20-Jun-01	18.31	13.57	15.68		20	15.91
172	21-Jun-01	19.60	15.13	17.23		20	16.99
173	22-Jun-01	20.25	16.08	18.13		20	17.77
174	23-Jun-01	19.44	16.71	18.16		20	18.25
175	24-Jun-01	19.60	15.92	17.61		20	18.64
176	25-Jun-01	17.99	15.13	16.63		20	18.84
177	26-Jun-01	19.44	15.29	17.05		20	19.23
178	27-Jun-01	17.83	16.08	17.02		20	19.16
179	28-Jun-01	19.77	15.77	17.50		20	19.19
180	29-Jun-01	20.74	16.39	18.43		20	19.26
181	30-Jun-01	19.93	16.87	18.43		20	19.33
182	1-Jul-01	21.24	16.71	18.82		20	19.56
183	2-Jul-01	22.24	17.67	19.83		20	20.17
184	3-Jul-01	22.74	18.31	20.51		20	20.64
185	4-Jul-01	21.74	19.28	20.54		20	21.20
186	5-Jul-01	21.57	19.28	20.59		20	21.46
187	6-Jul-01	21.90	18.80	20.43		20	21.62
188	7-Jul-01	20.58	18.47	19.32		20	21.72
189	8-Jul-01	19.60	17.67	18.64		20	21.48
190	9-Jul-01	19.12	17.99	18.69		20	21.04
191	10-Jul-01	20.25	16.87	18.48		20	20.68
192	11-Jul-01	21.40	17.99	19.55		20	20.63
193	12-Jul-01	22.24	18.63	20.30		20	20.73
194	13-Jul-01	21.40	18.80	20.22		20	20.66
195	14-Jul-01	21.57	18.31	20.04		20	20.80

Import File : ... 2001\Temp\MF Salmon abv Camas Cr 2001.txt
Calibration Factor : 0.09

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: MF Salmon River abv Camas Cr.

Data Collection Site: right bank

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060206

HUC4 Name: Lower Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1163 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
196	15-Jul-01	20.25	17.83	18.68		20	20.89
197	16-Jul-01	18.63	16.87	17.75		20	20.82
198	17-Jul-01	17.19	15.77	16.57		20	20.38
199	18-Jul-01	17.67	14.81	16.06		20	19.85
200	19-Jul-01	19.12	14.81	16.86		20	19.40
201	20-Jul-01	18.96	15.92	17.55		20	19.06
202	21-Jul-01	20.41	16.24	18.25		20	18.89
203	22-Jul-01	20.58	16.55	18.63		20	18.94
204	23-Jul-01	21.40	17.50	19.37		20	19.33
205	24-Jul-01	21.90	17.99	19.94		20	20.01
206	25-Jul-01	22.24	18.15	20.10		20	20.66
207	26-Jul-01	22.24	18.31	20.22		20	21.10
208	27-Jul-01	21.24	17.67	19.59		20	21.43
209	28-Jul-01	20.41	17.34	18.92		20	21.43
210	29-Jul-01	19.28	16.08	17.66		20	21.24
211	30-Jul-01	18.31	16.08	17.12		20	20.80
212	31-Jul-01	17.83	14.49	16.05		20	20.22
213	1-Aug-01	18.96	14.49	16.66		20	19.75
214	2-Aug-01	20.74	15.92	18.12		20	19.54
215	3-Aug-01	20.09	17.34	18.79		20	19.37
216	4-Aug-01	20.74	17.67	19.10		20	19.42
217	5-Aug-01	21.40	16.87	18.89		20	19.72
218	6-Aug-01	22.07	17.50	19.80		20	20.26
219	7-Aug-01	21.40	18.63	20.22		20	20.77
220	8-Aug-01	22.57	18.15	20.10		20	21.29
221	9-Aug-01	21.07	18.47	20.00		20	21.33
222	10-Aug-01	21.57	17.83	19.61		20	21.55
223	11-Aug-01	21.40	18.31	20.00		20	21.64
224	12-Aug-01	20.74	17.67	19.42		20	21.55
225	13-Aug-01	20.58	17.83	19.34		20	21.33
226	14-Aug-01	20.41	17.50	18.99		20	21.19
227	15-Aug-01	20.58	17.83	19.26		20	20.91
228	16-Aug-01	21.24	17.67	19.53		20	20.93
229	17-Aug-01	21.57	17.83	19.67		20	20.93
230	18-Aug-01	21.07	17.83	19.56		20	20.88
231	19-Aug-01	20.74	17.34	18.97		20	20.88
232	20-Aug-01	19.93	16.24	18.15		20	20.79
233	21-Aug-01	19.93	16.08	17.93		20	20.72
234	22-Aug-01	18.96	16.08	17.79		20	20.49
235	23-Aug-01	19.28	15.77	17.53		20	20.21
236	24-Aug-01	19.60	15.45	17.36		20	19.93
237	25-Aug-01	19.93	15.92	17.96		20	19.77
238	26-Aug-01	20.25	16.39	18.37		20	19.70
239	27-Aug-01	20.25	17.19	18.86		20	19.74
240	28-Aug-01	19.60	16.87	18.23		20	19.70
241	29-Aug-01	19.93	16.24	17.94		20	19.83
242	30-Aug-01	19.12	16.39	17.97		20	19.81
243	31-Aug-01	18.63	16.39	17.67		20	19.67
244	1-Sep-01	18.31	16.08	17.24		20	19.44

Import File : ... 2001\Temp\MF Salmon abv Camas Cr 2001.txt

Calibration Factor : 0.09

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: MF Salmon River abv Camas Cr.

Data Collection Site: right bank

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060206

HUC4 Name: Lower Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1163 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
245	2-Sep-01	18.63	15.45	17.01		20	19.21
246	3-Sep-01	18.63	15.45	17.18		20	18.98
247	4-Sep-01	17.83	15.77	16.94		20	18.73
248	5-Sep-01	17.99	15.45	16.69		20	18.45
249	6-Sep-01	16.55	13.57	14.53		20	18.08
250	7-Sep-01	13.72	11.55	12.61		20	17.38
251	8-Sep-01	14.18	10.79	12.42		20	16.79
252	9-Sep-01	14.81	11.25	13.06		20	16.24
253	10-Sep-01	15.77	12.33	14.04		20	15.84
254	11-Sep-01	16.55	13.42	15.01		20	15.65
255	12-Sep-01	16.39	14.49	15.49		20	15.42
256	13-Sep-01	18.47	15.29	16.53		20	15.70
257	14-Sep-01	18.47	15.77	17.06		20	16.38
258	15-Sep-01	17.99	15.29	16.84		20	16.92
259	16-Sep-01	17.03	14.97	16.00		20	17.24
260	17-Sep-01	16.24	14.03	15.06		20	17.31
261	18-Sep-01	16.38	13.57	14.99		20	17.28
262	19-Sep-01	15.43	13.24	14.48		20	17.14
263	20-Sep-01	14.48	12.00	13.40		20	16.57
264	21-Sep-01	14.02	11.54	12.99		20	15.94
265	22-Sep-01	14.02	11.39	12.89		20	15.37
266	23-Sep-01	14.48	11.85	13.29		20	15.01
267	24-Sep-01	14.95	12.47	13.77		20	14.82
268	25-Sep-01	14.64	12.63	13.64		20	14.57
269	26-Sep-01	14.33	12.16	13.30		20	14.42
270	27-Sep-01	14.02	11.70	13.11		20	14.35
271	28-Sep-01	14.17	12.47	13.38		20	14.37
272	29-Sep-01	14.17	12.00	13.23		20	14.39
273	30-Sep-01	13.24	10.77	12.19		20	14.22
274	1-Oct-01	12.78	10.62	11.92		20	13.91
275	2-Oct-01	12.63	10.62	11.81		20	13.62
276	3-Oct-01	12.16	10.30	11.42		20	13.31
277	4-Oct-01	11.85	9.99	11.04		20	13.00
278	5-Oct-01	10.93	8.60	9.71		20	12.54
279	6-Oct-01	9.83	7.99	9.05		20	11.92
280	7-Oct-01	9.68	8.60	9.21		20	11.41
281	8-Oct-01	10.15	9.21	9.65		20	11.03
282	9-Oct-01	10.15	8.29	8.97		20	10.68
283	10-Oct-01	8.14	6.28	7.18		20	10.10
284	11-Oct-01	7.99	6.90	7.45		20	9.55
285	12-Oct-01	7.68	5.97	6.56		20	9.09
286	13-Oct-01	8.29	6.43	7.19		20	8.87
287	14-Oct-01	8.90	7.68	8.25		20	8.76
288	15-Oct-01	8.60	7.05	7.86		20	8.54
289	16-Oct-01	8.14	6.59	7.47		20	8.25
290	17-Oct-01	8.60	7.68	8.06		20	8.31
291	18-Oct-01	7.99	5.97	6.88		20	8.31
292	19-Oct-01	7.99	6.59	7.16		20	8.36
293	20-Oct-01	8.29	7.21	7.68		20	8.36

Import File : ... 2001\Temp\MF Salmon abv Camas Cr 2001.txt

Calibration Factor : 0.09

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: MF Salmon River abv Camas Cr.

Data Collection Site: right bank

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060206

HUC4 Name: Lower Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1163 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
294	21-Oct-01	7.99	5.97	6.85		20	8.23
295	22-Oct-01	7.21	6.59	6.84		20	8.03
296	23-Oct-01	7.21	6.28	6.71		20	7.90
297	24-Oct-01	5.97	4.09	4.84		20	7.52
298	25-Oct-01	4.72	3.63	4.20		20	7.05
299	26-Oct-01	4.57	3.31	4.10		20	6.57
300	27-Oct-01	5.34	3.31	4.19		20	6.14
301	28-Oct-01	7.05	5.50	6.22		21	6.01
302	29-Oct-01	8.14	7.05	7.57		20	6.14
303	30-Oct-01	8.45	7.68	8.07		20	6.32
304	31-Oct-01	8.29	7.52	7.83		20	6.65
305	1-Nov-01	7.52	6.74	6.93		20	7.05
306	2-Nov-01	6.90	6.43	6.67		20	7.38
307	3-Nov-01	6.59	5.81	6.18		20	7.56
308	4-Nov-01	5.97	4.57	5.13		20	7.41
309	5-Nov-01	4.88	3.63	4.23		20	6.94
310	6-Nov-01	4.25	3.15	3.74		20	6.34
311	7-Nov-01	4.09	3.31	3.68		20	5.74
312	8-Nov-01	3.31	1.58	2.21		20	5.14
313	9-Nov-01	1.73	0.45	0.98		20	4.40
314	10-Nov-01	0.78	-0.03	0.39		20	3.57
315	11-Nov-01	0.78	-0.03	0.41		20	2.83
316	12-Nov-01	1.89	0.78	1.19		20	2.40
317	13-Nov-01	3.15	1.73	2.25		20	2.25
318	14-Nov-01	4.40	3.00	3.73		20	2.29
319	15-Nov-01	4.25	3.47	3.91		20	2.43
320	16-Nov-01	3.94	3.31	3.71		20	2.74
321	17-Nov-01	3.78	3.31	3.56		20	3.17
322	18-Nov-01	4.88	3.78	4.31		20	3.76
323	19-Nov-01	4.72	4.25	4.42		20	4.16
324	20-Nov-01	4.25	3.47	3.82		20	4.32
325	21-Nov-01	5.19	4.40	4.79		20	4.43
326	22-Nov-01	5.03	4.57	4.80		20	4.54
327	23-Nov-01	4.57	3.31	3.86		20	4.63
328	24-Nov-01	3.15	1.73	2.24		20	4.54
329	25-Nov-01	1.58	0.94	1.23		20	4.07
330	26-Nov-01	1.25	0.78	1.04		20	3.57
331	27-Nov-01	0.94	-0.03	0.58		20	3.10
332	28-Nov-01	-0.03	-0.03	-0.03		20	2.36
333	29-Nov-01	-0.03	-0.03	-0.03		20	1.63
334	30-Nov-01	0.13	-0.03	-0.02		20	1.00
335	1-Dec-01	0.29	-0.03	0.02		20	0.59
336	2-Dec-01	-0.03	-0.03	-0.03		20	0.36
337	3-Dec-01	0.13	-0.03	0.02		20	0.20
338	4-Dec-01	-0.03	-0.03	-0.03		20	0.06
339	5-Dec-01	-0.03	-0.03	-0.03		20	0.06
340	6-Dec-01	-0.03	-0.03	-0.03		20	0.06
341	7-Dec-01	-0.03	-0.03	-0.03		20	0.04
342	8-Dec-01	-0.03	-0.03	-0.03		20	-0.01
343	9-Dec-01	-0.03	-0.03	-0.03		20	-0.01
344	10-Dec-01	-0.03	-0.03	-0.03		20	-0.03

Import File : ... 2001\Temp\MF Salmon abv Camas Cr 2001.txt

Calibration Factor : 0.09

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: MF Salmon River abv Camas Cr.

Data Collection Site: right bank

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060206

HUC4 Name: Lower Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1163 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
345	11-Dec-01	-0.03	-0.03	-0.03		20	-0.03
346	12-Dec-01	-0.03	-0.03	-0.03		20	-0.03
347	13-Dec-01	-0.03	-0.03	-0.03		20	-0.03
348	14-Dec-01	-0.03	-0.03	-0.03		20	-0.03
349	15-Dec-01	-0.03	-0.03	-0.03		20	-0.03
350	16-Dec-01	-0.03	-0.03	-0.03		20	-0.03
351	17-Dec-01	-0.03	-0.03	-0.03		20	-0.03
352	18-Dec-01	-0.03	-0.03	-0.03		20	-0.03
353	19-Dec-01	-0.03	-0.03	-0.03		20	-0.03
354	20-Dec-01	-0.03	-0.03	-0.03		20	-0.03
355	21-Dec-01	-0.03	-0.03	-0.03		20	-0.03
356	22-Dec-01	-0.03	-0.03	-0.03		20	-0.03
357	23-Dec-01	-0.03	-0.03	-0.03		20	-0.03
358	24-Dec-01	-0.03	-0.03	-0.03		20	-0.03
359	25-Dec-01	-0.03	-0.03	-0.03		20	-0.03
360	26-Dec-01	-0.03	-0.03	-0.03		20	-0.03
361	27-Dec-01	-0.03	-0.03	-0.03		20	-0.03
362	28-Dec-01	-0.03	-0.03	-0.03		20	-0.03
363	29-Dec-01	-0.03	-0.03	-0.03		20	-0.03
364	30-Dec-01	-0.03	-0.03	-0.03		20	-0.03
365	31-Dec-01	-0.03	-0.03	-0.03		20	-0.03

Import File : ... 2001\Temp\MF Salmon abv Camas Cr 2001.txt

Calibration Factor : 0.09

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: MF Salmon R. abv Loon Creek

Data Collection Site: right bank

Data Period: 1/1/02 - 12/31/02

HUC4 Number: 17060205

HUC4 Name: Upper Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1228 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S-spawn	Nbr of Msrmts per day	7-Day Average of High
1	1-Jan-02	0.02	0.00	0.00		20	
2	2-Jan-02	0.02	0.00	0.00		20	
3	3-Jan-02	0.02	0.00	0.00		20	
4	4-Jan-02	0.02	0.00	0.00		20	
5	5-Jan-02	0.16	0.00	0.10		20	
6	6-Jan-02	0.02	0.00	0.00		20	
7	7-Jan-02	0.02	0.00	0.00		20	0.04
8	8-Jan-02	0.16	0.00	0.03		20	0.06
9	9-Jan-02	0.16	0.00	0.02		20	0.08
10	10-Jan-02	0.02	0.00	0.00		20	0.08
11	11-Jan-02	0.02	0.00	0.00		20	0.08
12	12-Jan-02	0.02	0.00	0.00		20	0.06
13	13-Jan-02	0.16	0.00	0.02		20	0.08
14	14-Jan-02	0.02	0.00	0.00		20	0.08
15	15-Jan-02	0.02	0.00	0.00		20	0.06
16	16-Jan-02	0.02	0.00	0.00		20	0.04
17	17-Jan-02	0.02	0.00	0.00		20	0.04
18	18-Jan-02	0.02	0.00	0.00		20	0.04
19	19-Jan-02	0.02	0.00	0.00		20	0.04
20	20-Jan-02	0.02	0.00	0.00		20	0.02
21	21-Jan-02	0.02	0.00	0.00		20	0.02
22	22-Jan-02	0.02	0.00	0.00		20	0.02
23	23-Jan-02	0.02	0.00	0.00		20	0.02
24	24-Jan-02	0.02	0.00	0.00		20	0.02
25	25-Jan-02	0.02	0.00	0.00		20	0.02
26	26-Jan-02	0.02	0.00	0.00		20	0.02
27	27-Jan-02	0.02	0.00	0.00		20	0.02
28	28-Jan-02	0.02	0.00	0.00		20	0.02
29	29-Jan-02	0.02	0.00	0.00		20	0.02
30	30-Jan-02	0.02	0.00	0.00		20	0.02
31	31-Jan-02	0.02	0.00	0.00		20	0.02
32	1-Feb-02	0.02	0.00	0.00		20	0.02
33	2-Feb-02	0.02	0.00	0.00		20	0.02
34	3-Feb-02	0.02	0.00	0.00		20	0.02
35	4-Feb-02	0.02	0.00	0.00		20	0.02
36	5-Feb-02	0.02	0.00	0.00		20	0.02
37	6-Feb-02	0.02	0.00	0.00		20	0.02
38	7-Feb-02	0.02	0.00	0.00		20	0.02
39	8-Feb-02	0.02	0.00	0.00		20	0.02
40	9-Feb-02	0.02	0.00	0.00		20	0.02
41	10-Feb-02	0.02	0.00	0.00		20	0.02
42	11-Feb-02	0.02	0.00	0.00		20	0.02
43	12-Feb-02	0.02	0.00	0.00		20	0.02
44	13-Feb-02	0.02	0.00	0.00		20	0.02
45	14-Feb-02	0.02	0.00	0.00		20	0.02
46	15-Feb-02	0.02	0.00	0.00		20	0.02
47	16-Feb-02	0.02	0.00	0.00		20	0.02

Import File : ... way\Selway 2001\Temp\Big Creek 2001-00.txt

Calibration Factor : -0.02

Idaho Cold Water Aquatic Life Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
22 °C Instantaneous	0	0%	
19 °C Average	4	4%	
Days Evaluated & Date Range	92	22-Jun	21-Sep

Idaho Salmonid Spawning Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Instantaneous Spring	24	26%	
9 °C Average Spring	48	52%	
Spring Days Eval'd w/in Dates	92	15-Apr	15-Jul
13 °C Instantaneous Fall	50	54%	
9 °C Average Fall	53	57%	
Fall Days Eval'd w/in Dates	93	15-Aug	15-Nov
13 °C Instantaneous Total *	74	40%	
9 °C Average Total *	101	55%	
Tot Days Eval'd w/in Both Dates *	185		
* If spring & fall dates overlap double counting may occur.			

Idaho Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Juvnl Rearing MWMT (J)	0	0%	
Juvenile Days Eval'd w/in Dates	0	1-Jun	31-Aug
9 °C Spawning Daily Ave (S)	0	0%	
Spawning Days Eval'd w/in Dates	0	1-Sep	31-Oct

NOTES

Comments: Data from one deployment wrapped so that fall 2001 data follows summer 2002 data. Stream is *a priori* natural. Monitored as state Outstanding Resource Water nominee. Temperature exceeds Idaho' cold water aquatic life criteria less than 10% of c

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: MF Salmon R. abv Loon Creek

Data Collection Site: right bank

Data Period: 1/1/02 - 12/31/02

HUC4 Number: 17060205

HUC4 Name: Upper Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1228 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
48	17-Feb-02	0.02	0.00	0.00		20	0.02
49	18-Feb-02	0.02	0.00	0.00		20	0.02
50	19-Feb-02	0.02	0.00	0.00		20	0.02
51	20-Feb-02	0.16	0.00	0.02		20	0.04
52	21-Feb-02	0.02	0.00	0.00		20	0.04
53	22-Feb-02	0.16	0.00	0.02		20	0.06
54	23-Feb-02	0.02	0.00	0.00		20	0.06
55	24-Feb-02	0.16	0.00	0.01		20	0.08
56	25-Feb-02	0.16	0.00	0.03		20	0.10
57	26-Feb-02	0.16	0.00	0.02		20	0.12
58	27-Feb-02	0.16	0.00	0.04		20	0.12
59	28-Feb-02	0.16	0.00	0.01		20	0.14
60	1-Mar-02	0.16	0.00	0.02		20	0.14
61	2-Mar-02	0.16	0.00	0.02		20	0.16
62	3-Mar-02	0.16	0.00	0.02		20	0.16
63	4-Mar-02	0.16	0.00	0.01		20	0.16
64	5-Mar-02	0.16	0.00	0.04		20	0.16
65	6-Mar-02	0.16	0.00	0.04		20	0.16
66	7-Mar-02	0.16	0.00	0.05		20	0.16
67	8-Mar-02	0.16	0.00	0.03		20	0.16
68	9-Mar-02	0.16	0.00	0.05		20	0.16
69	10-Mar-02	0.16	0.00	0.05		20	0.16
70	11-Mar-02	0.16	0.00	0.03		20	0.16
71	12-Mar-02	0.16	0.00	0.04		20	0.16
72	13-Mar-02	0.32	0.00	0.10		20	0.18
73	14-Mar-02	0.80	0.16	0.32		20	0.27
74	15-Mar-02	1.44	0.16	0.81		20	0.46
75	16-Mar-02	1.91	0.48	1.05		20	0.71
76	17-Mar-02	0.96	0.00	0.44		20	0.82
77	18-Mar-02	1.59	0.00	0.76		20	1.03
78	19-Mar-02	2.38	0.48	1.51		20	1.34
79	20-Mar-02	3.96	1.75	2.79		20	1.86
80	21-Mar-02	5.99	2.38	4.09		20	2.60
81	22-Mar-02	6.30	3.33	4.88		20	3.30
82	23-Mar-02	6.30	3.80	4.99		20	3.93
83	24-Mar-02	5.99	3.96	4.99		20	4.64
84	25-Mar-02	8.00	4.27	5.88		20	5.56
85	26-Mar-02	6.45	4.43	5.49		20	6.14
86	27-Mar-02	7.54	4.11	5.62		20	6.65
87	28-Mar-02	7.69	4.43	5.77		20	6.90
88	29-Mar-02	7.08	3.49	5.16		20	7.01
89	30-Mar-02	9.08	4.43	6.59		20	7.40
90	31-Mar-02	8.76	5.36	6.96		20	7.80
91	1-Apr-02	8.61	4.90	6.66		20	7.89
92	2-Apr-02	7.23	4.74	6.08		20	8.00
93	3-Apr-02	8.46	4.58	6.35		20	8.13
94	4-Apr-02	8.15	4.74	6.38		20	8.20
95	5-Apr-02	6.92	5.05	6.19		20	8.17
96	6-Apr-02	8.30	5.83	6.97		20	8.06
97	7-Apr-02	7.23	5.21	5.90		19	7.84

Import File : ... way\Selway 2001\Temp\Big Creek 2001-00.txt

Calibration Factor : -0.02

STATISTICS	
Maximum Daily Maximum (MDM)	21.7 °C
Maximum 7-Day Maximum (MWM)	20.5 °C
Maximum Daily Average (MDA)	20.1 °C
Maximum 7-Day Average (MWA)	19.2 °C
Mean Daily Maximum	8.0 °C
Mean Daily Average	7.1 °C
Mean Daily Minimum	6.4 °C
Minimum 7-Day Minimum	-0.1 °C
Minimum Daily Minimum	-0.7 °C
Mean of all Data	7.1 °C

EPA Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
10 °C 7-Day Avg of Daily Max	115	94%	
Nmbr of 7-Day Avg's w/in Dates	122	1-Jun	30-Sep

Seasonal Cold Water Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
26 °C Instantaneous	0	0%	
23 °C Average	0	0%	
Days Evaluated and Date Range	92	22-Jun	21-Sep

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: MF Salmon R. abv Loon Creek

Data Collection Site: right bank

Data Period: 1/1/02 - 12/31/02

HUC4 Number: 17060205

HUC4 Name: Upper Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1228 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
98	8-Apr-02	6.92	4.11	5.50		20	7.60
99	9-Apr-02	6.76	5.68	6.07		20	7.53
100	10-Apr-02	6.76	5.52	6.03		20	7.29
101	11-Apr-02	6.30	5.05	5.57		20	7.03
102	12-Apr-02	7.84	5.36	6.35		20	7.16
103	13-Apr-02	7.69	6.45	6.97		20	7.07
104	14-Apr-02	7.54	6.30	6.88		20	7.12
105	15-Apr-02	6.45	3.65	4.44		20	7.05
106	16-Apr-02	5.05	3.18	4.11		20	6.80
107	17-Apr-02	4.90	3.18	3.89		20	6.54
108	18-Apr-02	5.36	3.49	4.27		20	6.40
109	19-Apr-02	7.08	4.11	5.41		20	6.30
110	20-Apr-02	7.23	4.58	6.02		20	6.23
111	21-Apr-02	6.92	5.21	6.27		20	6.14
112	22-Apr-02	8.92	5.68	7.08		20	6.49
113	23-Apr-02	8.61	6.76	7.70		20	7.00
114	24-Apr-02	7.08	4.27	5.94		20	7.31
115	25-Apr-02	8.00	4.90	6.57		20	7.69
116	26-Apr-02	8.00	6.30	7.32		20	7.82
117	27-Apr-02	8.76	6.30	7.47		20	8.04
118	28-Apr-02	8.15	5.68	6.99		20	8.22
119	29-Apr-02	8.92	5.36	7.26		20	8.22
120	30-Apr-02	8.92	7.08	8.19		20	8.26
121	1-May-02	9.23	6.45	7.91		20	8.57
122	2-May-02	8.92	6.14	7.83		20	8.70
123	3-May-02	8.92	6.61	7.82		20	8.83
124	4-May-02	8.46	5.21	7.02		20	8.79
125	5-May-02	8.15	5.99	6.73		20	8.79
126	6-May-02	7.84	4.90	6.27		20	8.63
127	7-May-02	7.69	4.90	6.13		20	8.46
128	8-May-02	5.83	3.18	4.49		20	7.97
129	9-May-02	5.68	3.49	4.65		20	7.51
130	10-May-02	7.08	4.58	5.77		20	7.25
131	11-May-02	9.23	5.52	7.35		20	7.36
132	12-May-02	10.63	6.76	8.83		20	7.71
133	13-May-02	10.47	7.69	9.34		20	8.09
134	14-May-02	11.09	8.15	9.75		20	8.57
135	15-May-02	10.16	6.92	8.02		20	9.19
136	16-May-02	9.08	5.83	7.35		20	9.68
137	17-May-02	9.54	6.92	8.14		20	10.03
138	18-May-02	10.63	7.23	8.87		20	10.23
139	19-May-02	10.47	8.30	9.34		20	10.21
140	20-May-02	9.85	7.54	8.24		20	10.12
141	21-May-02	7.54	6.14	6.64		20	9.61
142	22-May-02	5.99	5.21	5.62		20	9.01
143	23-May-02	6.45	5.52	5.90		20	8.64
144	24-May-02	8.46	5.52	6.61		20	8.48
145	25-May-02	9.08	7.23	8.13		20	8.26
146	26-May-02	9.85	8.46	9.13		20	8.17
147	27-May-02	10.00	8.30	9.12		20	8.20
148	28-May-02	10.47	8.76	9.63		20	8.61

Import File : ... way\Selway 2001\Temp\Big Creek 2001-00.txt
Calibration Factor : -0.02

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: MF Salmon R. abv Loon Creek

Data Collection Site: right bank

Data Period: 1/1/02 - 12/31/02

HUC4 Number: 17060205

HUC4 Name: Upper Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1228 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
149	29-May-02	10.94	8.92	9.87		20	9.32
150	30-May-02	10.94	8.76	9.41		20	9.96
151	31-May-02	10.31	8.30	9.09		20	10.23
152	1-Jun-02	10.31	9.08	9.45		20	10.40
153	2-Jun-02	8.92	8.15	8.54		20	10.27
154	3-Jun-02	9.69	7.84	8.59		20	10.23
155	4-Jun-02	9.39	8.76	9.11		20	10.07
156	5-Jun-02	10.31	8.46	9.18		20	9.98
157	6-Jun-02	10.94	9.08	10.01		20	9.98
158	7-Jun-02	10.78	9.23	9.96		20	10.05
159	8-Jun-02	10.16	8.15	8.94		20	10.03
160	9-Jun-02	8.00	6.45	7.20		20	9.90
161	10-Jun-02	7.84	6.14	6.78		20	9.63
162	11-Jun-02	9.69	7.08	8.12		20	9.67
163	12-Jun-02	10.78	8.30	9.43		20	9.74
164	13-Jun-02	12.02	9.23	10.46		20	9.90
165	14-Jun-02	12.64	10.63	11.69		20	10.16
166	15-Jun-02	12.64	11.24	12.05		20	10.52
167	16-Jun-02	13.25	11.24	12.22		20	11.27
168	17-Jun-02	13.25	11.55	12.31		20	12.04
169	18-Jun-02	12.48	11.09	11.54		20	12.44
170	19-Jun-02	11.40	8.61	10.00		20	12.53
171	20-Jun-02	12.64	9.69	11.09		20	12.61
172	21-Jun-02	12.64	11.24	12.13		20	12.61
173	22-Jun-02	12.48	11.24	11.90		20	12.59
174	23-Jun-02	12.95	11.24	12.15		20	12.55
175	24-Jun-02	14.64	11.86	13.05		20	12.75
176	25-Jun-02	15.59	13.10	14.28		20	13.19
177	26-Jun-02	15.75	14.02	14.88		20	13.81
178	27-Jun-02	15.91	13.71	14.85		20	14.28
179	28-Jun-02	16.06	14.49	15.39		20	14.77
180	29-Jun-02	16.06	14.18	15.05		20	15.28
181	30-Jun-02	15.43	13.10	14.35		20	15.63
182	1-Jul-02	15.59	13.71	14.78		20	15.77
183	2-Jul-02	15.75	13.56	14.74		20	15.79
184	3-Jul-02	16.38	14.33	15.34		20	15.88
185	4-Jul-02	17.18	15.28	16.21		20	16.06
186	5-Jul-02	16.86	14.80	16.00		20	16.18
187	6-Jul-02	17.02	15.59	16.38		20	16.32
188	7-Jul-02	17.81	16.54	17.10		20	16.66
189	8-Jul-02	17.98	16.23	17.10		20	17.00
190	9-Jul-02	17.65	15.28	16.63		20	17.27
191	10-Jul-02	18.78	16.23	17.37		20	17.61
192	11-Jul-02	20.08	17.34	18.58		20	18.03
193	12-Jul-02	21.05	18.14	19.41		20	18.62
194	13-Jul-02	20.73	18.62	19.63		20	19.15
195	14-Jul-02	21.71	18.94	20.08		20	19.71
196	15-Jul-02	20.40	18.78	19.67		20	20.06
197	16-Jul-02	19.26	17.65	18.39		20	20.29

Import File : ... way\Selway 2001\Temp\Big Creek 2001-00.txt
Calibration Factor : -0.02

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: MF Salmon R. abv Loon Creek

Data Collection Site: right bank

Data Period: 1/1/02 - 12/31/02

HUC4 Number: 17060205

HUC4 Name: Upper Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1228 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
198	17-Jul-02	19.91	17.02	18.36		20	20.45
199	18-Jul-02	19.59	18.14	18.75		20	20.38
200	19-Jul-02	18.62	17.34	17.99		20	20.03
201	20-Jul-02	19.26	16.54	17.79		20	19.82
202	21-Jul-02	19.59	17.34	18.40		20	19.52
203	22-Jul-02	18.94	17.34	18.00		20	19.31
204	23-Jul-02	19.26	16.54	17.74		20	19.31
205	24-Jul-02	19.43	17.50	18.56		20	19.24
206	25-Jul-02	18.94	17.18	18.11		20	19.15
207	26-Jul-02	19.10	16.86	17.98		20	19.22
208	27-Jul-02	18.62	17.02	17.91		20	19.13
209	28-Jul-02	18.78	16.06	17.39		20	19.01
210	29-Jul-02	19.26	16.70	17.88		20	19.06
211	30-Jul-02	18.94	17.02	17.99		20	19.01
212	31-Jul-02	18.78	16.70	17.81		20	18.92
213	1-Aug-02	18.30	15.75	17.13		20	18.83
214	2-Aug-02	18.14	16.06	17.08		20	18.69
215	3-Aug-02	17.50	15.59	16.69		20	18.53
216	4-Aug-02	17.81	15.91	16.92		20	18.39
217	5-Aug-02	18.30	16.38	17.28		20	18.25
218	6-Aug-02	18.14	15.91	17.07		20	18.14
219	7-Aug-02	17.18	15.75	16.46		20	17.91
220	8-Aug-02	16.23	14.18	15.28		20	17.61
221	9-Aug-02	16.86	13.41	15.11		20	17.43
222	10-Aug-02	17.65	14.49	15.93		20	17.45
223	11-Aug-02	17.98	15.28	16.57		20	17.48
224	12-Aug-02	18.30	15.28	16.71		20	17.48
225	13-Aug-02	18.78	15.43	16.99		20	17.57
226	14-Aug-02	18.78	15.75	17.25		20	17.80
227	15-Aug-02	18.94	15.91	17.43		20	18.18
228	16-Aug-02	18.94	16.06	17.51		20	18.48
229	17-Aug-02	17.98	15.28	16.73		20	18.53
230	18-Aug-02	17.81	14.64	16.23		20	18.50
231	19-Aug-02	17.50	14.64	16.17		20	18.39
232	20-Aug-02	16.70	15.11	15.83		20	18.09
233	21-Aug-02	15.75	14.64	15.24		20	17.66
234	22-Aug-02	15.91	12.95	14.37		20	17.23
235	23-Aug-02	15.59	13.10	14.38		20	16.75
236	24-Aug-02	15.28	13.10	14.25		20	16.36
237	25-Aug-02	16.38	13.10	14.56		20	16.16
238	26-Aug-02	15.43	13.56	14.41		20	15.86
239	27-Aug-02	14.96	13.10	13.96		20	15.61
240	28-Aug-02	15.75	13.56	14.64		20	15.61
241	29-Aug-02	14.96	13.41	14.27		20	15.48
242	30-Aug-02	14.80	13.10	13.98		20	15.37
243	31-Aug-02	16.70	13.56	14.83		20	15.57
244	1-Sep-02	16.38	14.18	15.30		20	15.57
245	2-Sep-02	17.50	14.18	15.67		20	15.86
246	3-Sep-02	16.86	14.96	16.08		20	16.14

Import File : ... way\Selway 2001\Temp\Big Creek 2001-00.txt
Calibration Factor : -0.02

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: MF Salmon R. abv Loon Creek

Data Collection Site: right bank

Data Period: 1/1/02 - 12/31/02

HUC4 Number: 17060205

HUC4 Name: Upper Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1228 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
247	4-Sep-02	16.86	14.64	15.88		20	16.29
248	5-Sep-02	16.70	14.49	15.66		20	16.54
249	6-Sep-02	15.91	14.33	14.86		20	16.70
250	7-Sep-02	14.64	12.95	13.53		20	16.41
251	8-Sep-02	14.33	11.09	12.57		20	16.11
252	9-Sep-02	14.18	10.63	12.45		20	15.64
253	10-Sep-02	14.80	10.94	12.80		20	15.35
254	11-Sep-02	15.59	11.86	13.60		20	15.16
255	12-Sep-02	16.06	12.64	14.32		20	15.07
256	13-Sep-02	16.06	12.79	14.44		20	15.09
257	14-Sep-02	15.59	12.48	14.19		20	15.23
258	15-Sep-02	15.28	13.10	14.27		20	15.37
259	16-Sep-02	14.96	12.79	13.97		20	15.48
260	17-Sep-02	16.86	13.25	14.90		20	15.77
261	18-Sep-02	16.70	13.10	14.86		20	15.93
262	19-Sep-02	15.75	12.48	14.14		20	15.89
263	20-Sep-02	15.11	11.09	13.15		20	15.75
264	21-Sep-02	14.49	10.78	12.74		20	15.59
265	22-Sep-02	15.11	10.63	12.74		20	15.57
266	23-Sep-02	15.59	10.94	13.17		20	15.66
267	24-Sep-02	16.06	11.55	13.64		20	15.54
268	25-Sep-02	15.11	11.71	13.41		20	15.32
269	26-Sep-02	15.11	11.24	13.11		20	15.23
270	27-Sep-02	14.96	10.94	12.92		20	15.20
271	28-Sep-02	14.64	11.71	13.13		20	15.23
272	29-Sep-02	14.96	11.09	12.93		20	15.20
273	30-Sep-02	13.87	9.85	11.92		20	14.96
274	1-Oct-02	13.87	9.69	11.76		20	14.65
275	2-Oct-02	13.25	9.69	11.50		20	14.38
276	3-Oct-02	13.10	9.39	11.22		20	14.09
277	4-Oct-02	12.48	9.08	10.79		20	13.74
278	5-Oct-02	11.09	7.84	9.54		20	13.23
279	6-Oct-02	10.78	6.92	8.87		20	12.63
280	7-Oct-02	9.85	7.69	8.96		20	12.06
281	8-Oct-02	10.94	8.61	9.55		20	11.64
282	9-Oct-02	9.39	7.69	8.48		20	11.09
283	10-Oct-02	7.84	5.36	6.73		20	10.34
284	11-Oct-02	8.61	6.45	7.20		20	9.79
285	12-Oct-02	6.76	5.21	6.09		20	9.17
286	13-Oct-02	8.76	5.68	6.92		20	8.88
287	14-Oct-02	8.76	7.08	7.86		20	8.72
288	15-Oct-02	9.08	6.76	7.71		20	8.46
289	16-Oct-02	8.46	5.83	7.23		20	8.32
290	17-Oct-02	9.23	7.38	8.04		20	8.52
291	18-Oct-02	7.54	5.36	6.45		20	8.37
292	19-Oct-02	7.54	5.83	6.75		20	8.48
293	20-Oct-02	8.92	6.45	7.62		20	8.50
294	21-Oct-02	7.38	5.05	6.37		20	8.31
295	22-Oct-02	7.08	5.99	6.58		20	8.02

Import File : ... way\Selway 2001\Temp\Big Creek 2001-00.txt

Calibration Factor : -0.02

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: MF Salmon R. abv Loon Creek

Data Collection Site: right bank

Data Period: 1/1/02 - 12/31/02

HUC4 Number: 17060205

HUC4 Name: Upper Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1228 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
296	23-Oct-02	7.08	5.36	6.40		20	7.82
297	24-Oct-02	5.05	3.49	4.19		20	7.23
298	25-Oct-02	5.05	3.18	3.95		20	6.87
299	26-Oct-02	5.05	2.86	3.85		20	6.52
300	27-Oct-02	5.36	2.70	4.03		20	6.01
301	28-Oct-02	7.08	5.21	6.11		21	5.96
302	29-Oct-02	8.15	6.92	7.44		20	6.12
303	30-Oct-02	8.30	7.38	7.77		20	6.29
304	31-Oct-02	7.84	7.23	7.47		20	6.69
305	1-Nov-02	7.08	6.14	6.51		20	6.98
306	2-Nov-02	6.92	5.99	6.35		20	7.25
307	3-Nov-02	6.61	5.21	5.93		20	7.43
308	4-Nov-02	5.36	4.27	4.84		20	7.18
309	5-Nov-02	4.74	3.49	3.98		20	6.69
310	6-Nov-02	4.27	2.86	3.58		20	6.12
311	7-Nov-02	3.80	2.70	3.32		20	5.54
312	8-Nov-02	2.54	1.28	1.73		20	4.89
313	9-Nov-02	1.12	0.00	0.62		20	4.06
314	10-Nov-02	0.64	0.00	0.22		20	3.21
315	11-Nov-02	0.80	0.00	0.29		20	2.56
316	12-Nov-02	1.91	0.48	1.12		20	2.15
317	13-Nov-02	3.18	1.44	2.26		20	2.00
318	14-Nov-02	4.74	3.01	3.74		20	2.13
319	15-Nov-02	4.43	3.18	3.79		20	2.40
320	16-Nov-02	3.96	3.01	3.53		20	2.81
321	17-Nov-02	3.65	2.70	3.28		20	3.24
322	18-Nov-02	5.21	3.65	4.30		20	3.87
323	19-Nov-02	4.43	3.49	4.12		20	4.23
324	20-Nov-02	4.27	3.01	3.56		20	4.38
325	21-Nov-02	5.05	4.27	4.64		20	4.43
326	22-Nov-02	4.90	4.11	4.43		20	4.50
327	23-Nov-02	3.96	2.86	3.42		20	4.50
328	24-Nov-02	2.70	1.12	1.71		20	4.36
329	25-Nov-02	1.28	0.32	0.80		20	3.80
330	26-Nov-02	1.28	0.48	0.78		20	3.35
331	27-Nov-02	0.64	0.00	0.18		20	2.83
332	28-Nov-02	0.16	-0.65	-0.05		20	2.13
333	29-Nov-02	0.16	0.00	0.15		20	1.45
334	30-Nov-02	0.02	0.00	0.00		20	0.89
335	1-Dec-02	0.16	0.00	0.04		20	0.53
336	2-Dec-02	0.16	0.00	0.09		20	0.37
337	3-Dec-02	0.16	0.16	0.16		20	0.21
338	4-Dec-02	0.16	0.00	0.14		20	0.14
339	5-Dec-02	0.16	0.16	0.16		20	0.14
340	6-Dec-02	0.16	0.16	0.16		20	0.14
341	7-Dec-02	0.32	0.16	0.17		20	0.18
342	8-Dec-02	0.32	0.16	0.21		20	0.21
343	9-Dec-02	0.16	0.16	0.16		20	0.21
344	10-Dec-02	0.16	0.16	0.16		20	0.21
345	11-Dec-02	0.32	0.16	0.21		20	0.23
346	12-Dec-02	0.32	0.16	0.23		20	0.25

Import File : ... way\Selway 2001\Temp\Big Creek 2001-00.txt
Calibration Factor : -0.02

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: MF Salmon R. abv Loon Creek

Data Collection Site: right bank

Data Period: 1/1/02 - 12/31/02

HUC4 Number: 17060205

HUC4 Name: Upper Middle Fork Salmon

South of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 1228 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
347	13-Dec-02	0.32	0.16	0.21		20	0.27
348	14-Dec-02	0.32	0.16	0.18		20	0.27
349	15-Dec-02	0.32	0.16	0.22		20	0.27
350	16-Dec-02	0.48	0.16	0.32		20	0.32
351	17-Dec-02	0.32	0.16	0.20		20	0.34
352	18-Dec-02	0.32	0.16	0.18		20	0.34
353	19-Dec-02	0.16	0.16	0.16		20	0.32
354	20-Dec-02	0.16	0.16	0.16		20	0.30
355	21-Dec-02	0.16	0.16	0.16		20	0.27
356	22-Dec-02	0.32	0.00	0.15		20	0.27
357	23-Dec-02	0.32	0.00	0.21		20	0.25
358	24-Dec-02	0.32	-0.16	0.15		20	0.25
359	25-Dec-02	0.32	0.00	0.14		20	0.25
360	26-Dec-02	0.02	0.00	0.00		20	0.23
361	27-Dec-02	0.02	0.00	0.00		20	0.21
362	28-Dec-02	0.02	0.00	0.00		20	0.19
363	29-Dec-02	0.02	0.00	0.00		20	0.15
364	30-Dec-02	0.02	0.00	0.00		20	0.11
365	31-Dec-02	0.02	0.00	0.00		20	0.06

Import File : ... way\Selway 2001\Temp\Big Creek 2001-00.txt

Calibration Factor : -0.02

DEQ Summary of Temperature Data

Data Source: DEQ
Water Body: Moose Creek
Data Collection Site: near mouth
Data Period: 1/1/01 - 12/30/01

HUC4 Number: 17060302
HUC4 Name: Lower Selway
North of the Salmon Clearwater Divide
Idaho Bull Trout Elevation: 680 M
Waterbody ID Number: 27

Import File : ... \StowAway\Selway 2001\Moose Creek 2001.txt
Calibration Factor : 0.04

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S-spawn	Nbr of Msrmts per day	7-Day Average of High
1	1-Jan-01	2.08	0.80	1.18		20	
2	2-Jan-01	1.60	0.48	1.02		20	
3	3-Jan-01	1.12	0.00	0.41		20	
4	4-Jan-01	1.28	0.16	0.63		20	
5	5-Jan-01	2.08	0.48	1.01		20	
6	6-Jan-01	1.75	0.48	1.02		20	
7	7-Jan-01	0.32	0.00	0.03		20	1.46
8	8-Jan-01	0.16	0.00	0.10		20	1.19
9	9-Jan-01	0.16	0.16	0.16		20	0.98
10	10-Jan-01	0.32	0.16	0.22		20	0.87
11	11-Jan-01	0.48	0.16	0.25		20	0.75
12	12-Jan-01	0.32	0.16	0.22		20	0.50
13	13-Jan-01	0.80	0.16	0.36		20	0.37
14	14-Jan-01	1.12	0.16	0.53		20	0.48
15	15-Jan-01	1.75	0.32	0.70		20	0.71
16	16-Jan-01	1.12	0.16	0.55		20	0.84
17	17-Jan-01	1.28	0.00	0.40		20	0.98
18	18-Jan-01	0.32	0.00	0.15		20	0.96
19	19-Jan-01	0.80	0.16	0.38		20	1.03
20	20-Jan-01	1.92	0.48	0.86		20	1.19
21	21-Jan-01	1.75	0.16	0.78		20	1.28
22	22-Jan-01	2.55	0.80	1.34		20	1.39
23	23-Jan-01	2.39	0.48	1.31		20	1.57
24	24-Jan-01	0.64	0.00	0.29		20	1.48
25	25-Jan-01	1.28	0.16	0.58		20	1.62
26	26-Jan-01	2.39	0.48	1.09		20	1.85
27	27-Jan-01	1.75	0.00	0.60		20	1.82
28	28-Jan-01	0.96	0.00	0.22		20	1.71
29	29-Jan-01	0.16	0.00	0.09		20	1.37
30	30-Jan-01	0.32	0.16	0.19		20	1.07
31	31-Jan-01	0.48	0.16	0.29		20	1.05
32	1-Feb-01	1.44	0.32	0.65		20	1.07
33	2-Feb-01	0.64	0.00	0.29		20	0.82
34	3-Feb-01	2.23	0.32	0.93		20	0.89
35	4-Feb-01	0.80	0.00	0.58		20	0.87
36	5-Feb-01	1.92	0.00	0.81		20	1.12
37	6-Feb-01	2.23	0.48	1.15		20	1.39
38	7-Feb-01	1.28	0.16	0.54		20	1.51
39	8-Feb-01	0.48	0.00	0.14		20	1.37
40	9-Feb-01	0.48	0.00	0.15		20	1.35
41	10-Feb-01	0.64	0.16	0.31		20	1.12
42	11-Feb-01	1.92	0.16	0.62		20	1.28
43	12-Feb-01	2.08	0.16	0.66		20	1.30
44	13-Feb-01	2.39	0.32	1.09		20	1.32
45	14-Feb-01	1.44	0.16	0.69		20	1.35
46	15-Feb-01	1.28	0.00	0.50		20	1.46
47	16-Feb-01	2.39	0.16	1.15		20	1.73

Idaho Cold Water Aquatic Life Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
22 °C Instantaneous	28	30%	
19 °C Average	15	16%	
Days Evaluated & Date Range	92	22-Jun	21-Sep

Idaho Salmonid Spawning Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Instantaneous Spring	27	29%	
9 °C Average Spring	38	41%	
Spring Days Eval'd w/in Dates	92	15-Apr	15-Jul
13 °C Instantaneous Fall	50	54%	
9 °C Average Fall	52	56%	
Fall Days Eval'd w/in Dates	93	15-Aug	15-Nov
13 °C Instantaneous Total *	77	42%	
9 °C Average Total *	90	49%	
Tot Days Eval'd w/in Both Dates *	185		
* If spring & fall dates overlap double counting may occur.			

Idaho Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Juvnl Rearing MWMT (J)	72	78%	
Juvenile Days Eval'd w/in Dates	92	1-Jun	31-Aug
9 °C Spawning Daily Ave (S)	35	57%	
Spawning Days Eval'd w/in Dates	61	1-Sep	31-Oct

NOTES			
Comments: Combined data from two deployments. Stream is a priori natural. Monitored as state Outstanding Resource Water nominee.			

DEQ Summary of Temperature Data

Data Source: DEQ
Water Body: Moose Creek
Data Collection Site: near mouth
Data Period: 1/1/01 - 12/30/01

HUC4 Number: 17060302
HUC4 Name: Lower Selway
North of the Salmon Clearwater Divide
Idaho Bull Trout Elevation: 680 M
Waterbody ID Number: 27

Import File : ... \StowAway\Selway 2001\Moose Creek 2001.txt
Calibration Factor : 0.04

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
48	17-Feb-01	3.81	1.28	2.14		20	2.19
49	18-Feb-01	3.65	1.44	2.28		20	2.43
50	19-Feb-01	4.74	1.60	2.54		20	2.81
51	20-Feb-01	3.81	0.16	1.72		20	3.02
52	21-Feb-01	3.18	1.75	2.33		20	3.27
53	22-Feb-01	4.28	1.92	2.74		20	3.69
54	23-Feb-01	3.34	1.75	2.38		20	3.83
55	24-Feb-01	4.12	1.44	2.52		20	3.87
56	25-Feb-01	4.28	0.48	2.07		20	3.96
57	26-Feb-01	4.28	0.16	1.94		20	3.90
58	27-Feb-01	3.50	0.00	1.21		20	3.85
59	28-Feb-01	2.71	0.00	0.60		20	3.79
60	1-Mar-01	1.60	0.00	0.42		20	3.40
61	2-Mar-01	2.71	0.16	1.13		20	3.31
62	3-Mar-01	4.90	0.32	1.96		20	3.43
63	4-Mar-01	3.97	0.48	2.09		20	3.38
64	5-Mar-01	3.97	1.60	2.57		20	3.34
65	6-Mar-01	5.68	0.48	2.56		20	3.65
66	7-Mar-01	5.37	0.16	2.28		20	4.03
67	8-Mar-01	4.74	0.16	2.19		20	4.48
68	9-Mar-01	3.03	1.92	2.41		20	4.52
69	10-Mar-01	4.12	1.92	2.83		20	4.41
70	11-Mar-01	3.03	1.92	2.50		20	4.28
71	12-Mar-01	4.12	2.08	2.83		20	4.30
72	13-Mar-01	5.52	2.23	3.54		20	4.28
73	14-Mar-01	3.97	2.08	2.99		20	4.08
74	15-Mar-01	5.05	1.75	3.14		20	4.12
75	16-Mar-01	5.83	2.39	3.72		20	4.52
76	17-Mar-01	4.90	1.92	3.33		20	4.63
77	18-Mar-01	6.14	2.87	4.24		20	5.08
78	19-Mar-01	4.28	2.39	3.57		20	5.10
79	20-Mar-01	6.30	1.75	3.27		20	5.21
80	21-Mar-01	6.14	1.12	3.12		20	5.52
81	22-Mar-01	6.30	0.96	3.14		20	5.70
82	23-Mar-01	6.46	1.28	3.46		20	5.79
83	24-Mar-01	5.83	2.08	3.87		20	5.92
84	25-Mar-01	3.65	2.39	3.01		20	5.57
85	26-Mar-01	4.28	2.71	3.43		20	5.57
86	27-Mar-01	6.14	2.55	3.92		20	5.54
87	28-Mar-01	5.37	3.34	4.28		20	5.43
88	29-Mar-01	6.30	3.50	4.64		20	5.43
89	30-Mar-01	5.99	3.65	4.66		20	5.37
90	31-Mar-01	4.28	2.71	3.63		20	5.14
91	1-Apr-01	6.62	2.87	4.45		19	5.57
92	2-Apr-01	5.05	3.65	4.21		20	5.68
93	3-Apr-01	7.39	2.71	4.53		20	5.86
94	4-Apr-01	7.54	3.34	4.96		20	6.17
95	5-Apr-01	7.70	2.23	4.52		20	6.37
96	6-Apr-01	5.83	3.03	4.44		20	6.34
97	7-Apr-01	5.99	3.97	4.83		20	6.59

STATISTICS	
Maximum Daily Maximum (MDM)	25.0 °C
Maximum 7-Day Maximum (MWM)	24.2 °C
Maximum Daily Average (MDA)	21.2 °C
Maximum 7-Day Average (MWA)	20.4 °C
Mean Daily Maximum	9.4 °C
Mean Daily Average	7.5 °C
Mean Daily Minimum	6.0 °C
Minimum 7-Day Minimum	-0.1 °C
Minimum Daily Minimum	-0.1 °C
Mean of all Data	7.5 °C

EPA Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
10 °C 7-Day Avg of Daily Max	115	94%	
Nmbr of 7-Day Avg's w/in Dates	122	1-Jun	30-Sep

Seasonal Cold Water Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
26 °C Instantaneous	0	0%	
23 °C Average	0	0%	
Days Evaluated and Date Range	92	22-Jun	21-Sep

DEQ Summary of Temperature Data

Data Source: DEQ
Water Body: Moose Creek
Data Collection Site: near mouth
Data Period: 1/1/01 - 12/30/01

HUC4 Number: 17060302
HUC4 Name: Lower Selway
North of the Salmon Clearwater Divide
Idaho Bull Trout Elevation: 680 M
Waterbody ID Number: 27

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
98	8-Apr-01	5.52	3.03	4.16		20	6.43
99	9-Apr-01	4.90	2.87	3.96		20	6.41
100	10-Apr-01	5.83	3.03	4.33		20	6.19
101	11-Apr-01	6.30	3.34	4.60		20	6.01
102	12-Apr-01	6.46	3.97	4.85		20	5.83
103	13-Apr-01	6.30	3.50	4.75		20	5.90
104	14-Apr-01	6.93	3.03	4.72		20	6.03
105	15-Apr-01	8.77	2.55	5.30		20	6.50
106	16-Apr-01	9.24	3.18	5.95		20	7.12
107	17-Apr-01	8.77	4.43	6.67		20	7.54
108	18-Apr-01	8.47	5.37	6.91		20	7.85
109	19-Apr-01	7.39	5.05	6.22		20	7.98
110	20-Apr-01	6.30	3.65	4.98		20	7.98
111	21-Apr-01	6.77	4.12	5.42		20	7.96
112	22-Apr-01	8.32	4.12	5.86		20	7.89
113	23-Apr-01	7.54	5.37	6.37		20	7.65
114	24-Apr-01	10.48	5.52	7.44		20	7.90
115	25-Apr-01	9.85	4.59	7.10		20	8.09
116	26-Apr-01	8.47	4.59	6.50		20	8.25
117	27-Apr-01	6.77	4.28	5.71		20	8.31
118	28-Apr-01	5.68	3.97	4.94		20	8.16
119	29-Apr-01	5.83	3.81	4.93		20	7.80
120	30-Apr-01	5.52	4.74	5.01		20	7.51
121	1-May-01	4.74	3.65	4.18		20	6.69
122	2-May-01	5.52	3.18	4.25		20	6.08
123	3-May-01	7.24	3.18	5.11		20	5.90
124	4-May-01	8.47	4.28	6.28		20	6.14
125	5-May-01	7.54	5.52	6.33		20	6.41
126	6-May-01	7.39	3.18	5.26		20	6.63
127	7-May-01	8.16	3.65	5.91		20	7.01
128	8-May-01	8.00	4.74	6.57		20	7.47
129	9-May-01	8.32	5.05	6.68		20	7.87
130	10-May-01	8.47	4.74	6.61		20	8.05
131	11-May-01	8.32	4.43	6.42		20	8.03
132	12-May-01	8.32	4.74	6.52		20	8.14
133	13-May-01	7.39	5.37	6.09		20	8.14
134	14-May-01	7.08	4.90	5.95		20	7.99
135	15-May-01	6.62	4.74	5.66		20	7.79
136	16-May-01	6.46	5.21	5.77		20	7.52
137	17-May-01	7.54	3.65	5.55		20	7.39
138	18-May-01	7.08	5.52	6.18		20	7.21
139	19-May-01	8.62	4.43	6.44		20	7.26
140	20-May-01	8.00	5.52	6.78		20	7.34
141	21-May-01	8.77	4.12	6.42		20	7.58
142	22-May-01	10.17	5.21	7.57		20	8.09
143	23-May-01	10.64	5.68	8.01		20	8.69
144	24-May-01	10.94	6.14	8.25		20	9.17
145	25-May-01	10.94	6.77	8.57		20	9.73
146	26-May-01	10.64	6.62	8.47		20	10.01
147	27-May-01	10.48	6.77	8.59		20	10.37
148	28-May-01	10.94	7.39	9.07		20	10.68

Import File : ... \StowAway\Selway 2001\Moose Creek 2001.txt
Calibration Factor : 0.04

DEQ Summary of Temperature Data

Data Source: DEQ
 Water Body: Moose Creek
 Data Collection Site: near mouth
 Data Period: 1/1/01 - 12/30/01

HUC4 Number: 17060302
 HUC4 Name: Lower Selway
 North of the Salmon Clearwater Divide
 Idaho Bull Trout Elevation: 680 M
 Waterbody ID Number: 27

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
149	29-May-01	10.02	6.93	8.41		20	10.66
150	30-May-01	9.39	5.05	7.25		20	10.48
151	31-May-01	11.56	7.54	9.31		20	10.57
152	1-Jun-01	11.87	7.85	9.82		20	10.70
153	2-Jun-01	11.56	8.62	9.63		20	10.83
154	3-Jun-01	8.32	6.62	7.39		20	10.52
155	4-Jun-01	6.62	3.50	4.83		20	9.91
156	5-Jun-01	7.24	4.90	5.97		20	9.51
157	6-Jun-01	9.24	6.30	7.65		20	9.49
158	7-Jun-01	8.62	6.46	7.61		20	9.07
159	8-Jun-01	10.94	7.08	8.89		20	8.93
160	9-Jun-01	12.03	9.54	10.88		20	9.00
161	10-Jun-01	11.25	9.54	10.15		20	9.42
162	11-Jun-01	10.94	8.16	9.52		20	10.04
163	12-Jun-01	9.70	6.62	8.14		20	10.39
164	13-Jun-01	6.62	5.52	6.08		20	10.01
165	14-Jun-01	9.24	6.30	7.62		20	10.10
166	15-Jun-01	11.40	7.85	9.51		20	10.17
167	16-Jun-01	12.18	7.54	9.88		20	10.19
168	17-Jun-01	12.18	9.24	10.77		20	10.32
169	18-Jun-01	12.49	8.77	10.49		20	10.54
170	19-Jun-01	13.12	8.00	10.42		20	11.03
171	20-Jun-01	14.50	9.54	11.84		20	12.16
172	21-Jun-01	16.24	10.94	13.37	J	20	13.16
173	22-Jun-01	17.35	12.34	14.65	J	20	14.01
174	23-Jun-01	17.52	13.27	15.21	J	20	14.77
175	24-Jun-01	16.88	13.27	14.73	J	20	15.44
176	25-Jun-01	16.40	11.87	13.86	J	20	16.00
177	26-Jun-01	16.56	12.49	14.43	J	20	16.49
178	27-Jun-01	16.72	13.42	14.95	J	20	16.81
179	28-Jun-01	18.32	13.42	15.48	J	20	17.11
180	29-Jun-01	19.45	13.42	15.98	J	20	17.41
181	30-Jun-01	18.32	14.04	16.14	J	20	17.52
182	1-Jul-01	20.75	14.35	17.17	J	20	18.07
183	2-Jul-01	21.08	14.66	17.67	J	20	18.74
184	3-Jul-01	21.58	14.66	17.87	J	20	19.46
185	4-Jul-01	20.10	15.93	17.89	J	20	19.94
186	5-Jul-01	18.64	16.88	17.50	J	20	19.99
187	6-Jul-01	21.42	14.82	17.57	J	20	20.27
188	7-Jul-01	20.42	14.19	17.30	J	20	20.57
189	8-Jul-01	21.75	15.61	18.40	J	20	20.71
190	9-Jul-01	21.92	17.19	19.36	J	20	20.83
191	10-Jul-01	23.43	17.03	19.95	J	20	21.10
192	11-Jul-01	21.25	16.40	18.94	J	20	21.26
193	12-Jul-01	22.08	16.56	18.98	J	20	21.75
194	13-Jul-01	19.78	15.77	17.76	J	20	21.52
195	14-Jul-01	22.75	14.82	18.31	J	20	21.85
196	15-Jul-01	19.94	16.56	18.33	J	20	21.59
197	16-Jul-01	17.68	15.29	16.04	J	20	20.99

Import File : ... \StowAway\Selway 2001\Moose Creek 2001.txt
 Calibration Factor : 0.04

DEQ Summary of Temperature Data

Data Source: DEQ
Water Body: Moose Creek
Data Collection Site: near mouth
Data Period: 1/1/01 - 12/30/01

HUC4 Number: 17060302
HUC4 Name: Lower Selway
North of the Salmon Clearwater Divide
Idaho Bull Trout Elevation: 680 M
Waterbody ID Number: 27

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
198	17-Jul-01	17.35	12.96	14.98	J	20	20.12
199	18-Jul-01	17.68	12.96	15.10	J	20	19.61
200	19-Jul-01	21.25	13.73	16.75	J	20	19.49
201	20-Jul-01	19.13	14.82	16.96	J	20	19.40
202	21-Jul-01	20.59	15.14	17.40	J	20	19.09
203	22-Jul-01	21.42	14.82	17.86	J	20	19.30
204	23-Jul-01	22.08	14.35	17.89	J	20	19.93
205	24-Jul-01	22.42	14.66	18.35	J	20	20.65
206	25-Jul-01	22.92	15.14	18.73	J	20	21.40
207	26-Jul-01	22.75	14.98	18.68	J	20	21.62
208	27-Jul-01	23.08	14.66	18.82	J	20	22.18
209	28-Jul-01	20.42	15.93	18.26	J	20	22.16
210	29-Jul-01	17.84	14.19	16.20	J	20	21.64
211	30-Jul-01	15.93	13.88	14.94	J	20	20.77
212	31-Jul-01	17.03	13.27	14.62	J	20	20.00
213	1-Aug-01	19.62	11.72	15.25	J	20	19.52
214	2-Aug-01	22.25	13.88	17.74	J	20	19.45
215	3-Aug-01	22.42	15.45	18.87	J	20	19.36
216	4-Aug-01	19.94	16.24	18.20	J	20	19.29
217	5-Aug-01	23.25	14.50	18.41	J	20	20.06
218	6-Aug-01	24.46	15.77	19.87	J	20	21.28
219	7-Aug-01	24.98	17.35	20.93	J	20	22.42
220	8-Aug-01	24.80	17.84	21.19	J	20	23.16
221	9-Aug-01	24.29	16.72	20.42	J	20	23.45
222	10-Aug-01	23.59	16.40	19.95	J	20	23.62
223	11-Aug-01	22.92	15.61	19.28	J	20	24.04
224	12-Aug-01	24.12	15.61	19.61	J	20	24.17
225	13-Aug-01	24.12	18.16	21.08	J	20	24.12
226	14-Aug-01	24.29	17.19	20.67	J	20	24.02
227	15-Aug-01	24.12	16.56	20.17	J	20	23.92
228	16-Aug-01	23.94	16.24	19.90	J	20	23.87
229	17-Aug-01	23.77	15.77	19.66	J	20	23.90
230	18-Aug-01	23.08	16.72	20.00	J	20	23.92
231	19-Aug-01	22.08	15.29	18.66	J	20	23.63
232	20-Aug-01	21.75	13.73	17.70	J	20	23.29
233	21-Aug-01	21.58	13.88	17.71	J	20	22.90
234	22-Aug-01	19.78	14.19	17.37	J	20	22.28
235	23-Aug-01	20.92	14.50	17.41	J	20	21.85
236	24-Aug-01	21.75	16.24	18.48	J	20	21.56
237	25-Aug-01	21.75	13.27	17.43	J	20	21.37
238	26-Aug-01	22.58	13.58	17.86	J	20	21.44
239	27-Aug-01	22.42	14.50	18.32	J	20	21.54
240	28-Aug-01	21.08	14.98	18.25	J	20	21.47
241	29-Aug-01	22.08	13.58	17.59	J	20	21.80
242	30-Aug-01	21.92	13.88	17.72	J	20	21.94
243	31-Aug-01	20.26	14.35	17.39	J	20	21.73
244	1-Sep-01	21.08	14.04	17.36		S	21.63
245	2-Sep-01	21.28	11.60	16.99		S	21.45
246	3-Sep-01	21.45	14.23	17.70		S	21.31

Import File : ... \StowAway\Selway 2001\Moose Creek 2001.txt
Calibration Factor : 0.04

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Moose Creek

Data Collection Site: near mouth

Data Period: 1/1/01 - 12/30/01

HUC4 Number: 17060302

HUC4 Name: Lower Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 680 M

Waterbody ID Number: 27

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
247	4-Sep-01	20.30	13.92	17.28	S	20	21.20
248	5-Sep-01	18.84	15.02	16.58	S	20	20.73
249	6-Sep-01	18.03	13.15	15.32	S	20	20.18
250	7-Sep-01	15.33	12.53	13.82	S	20	19.47
251	8-Sep-01	16.59	9.12	12.57	S	20	18.83
252	9-Sep-01	17.23	9.12	12.86	S	20	18.25
253	10-Sep-01	18.03	10.05	13.80	S	20	17.76
254	11-Sep-01	18.68	10.98	14.64	S	20	17.53
255	12-Sep-01	18.68	11.75	15.00	S	20	17.51
256	13-Sep-01	18.84	13.46	15.97	S	20	17.63
257	14-Sep-01	20.63	13.77	16.77	S	20	18.38
258	15-Sep-01	19.49	12.53	15.95	S	20	18.80
259	16-Sep-01	18.68	12.07	15.32	S	20	19.00
260	17-Sep-01	18.19	12.84	15.45	S	20	19.03
261	18-Sep-01	18.68	12.07	14.98	S	20	19.03
262	19-Sep-01	16.44	10.98	13.83	S	20	18.71
263	20-Sep-01	16.28	9.28	12.62	S	20	18.34
264	21-Sep-01	14.85	9.43	12.21	S	20	17.52
265	22-Sep-01	16.28	8.97	12.26	S	20	17.06
266	23-Sep-01	16.75	9.74	13.02	S	20	16.78
267	24-Sep-01	17.07	10.52	13.46	S	20	16.62
268	25-Sep-01	14.70	10.37	12.92	S	20	16.05
269	26-Sep-01	16.28	12.07	13.79	S	20	16.03
270	27-Sep-01	14.54	10.83	13.00	S	20	15.78
271	28-Sep-01	14.85	11.60	13.16	S	20	15.78
272	29-Sep-01	16.13	10.37	12.88	S	20	15.76
273	30-Sep-01	14.85	8.82	11.82	S	20	15.49
274	1-Oct-01	14.70	8.66	11.55	S	20	15.15
275	2-Oct-01	13.61	8.82	11.27	S	20	14.99
276	3-Oct-01	13.30	8.04	10.59	S	20	14.57
277	4-Oct-01	12.07	6.97	9.48	S	20	14.22
278	5-Oct-01	10.98	5.41	8.11		20	13.66
279	6-Oct-01	10.21	4.79	7.44		20	12.82
280	7-Oct-01	9.28	6.03	7.94		20	12.02
281	8-Oct-01	10.83	8.50	9.39	S	20	11.47
282	9-Oct-01	9.58	8.04	8.91		20	10.89
283	10-Oct-01	10.52	6.81	8.49		20	10.50
284	11-Oct-01	9.58	7.74	8.42		20	10.14
285	12-Oct-01	7.43	6.50	7.06		20	9.63
286	13-Oct-01	8.50	6.34	7.19		20	9.39
287	14-Oct-01	8.04	6.81	7.36		20	9.21
288	15-Oct-01	9.89	6.50	7.72		20	9.08
289	16-Oct-01	8.97	4.79	6.70		20	8.99
290	17-Oct-01	10.05	6.65	7.90		20	8.92
291	18-Oct-01	7.58	5.25	6.50		20	8.64
292	19-Oct-01	7.12	6.19	6.67		20	8.59
293	20-Oct-01	9.58	6.81	7.63		20	8.75
294	21-Oct-01	7.43	4.79	6.20		20	8.66
295	22-Oct-01	7.74	6.65	7.05		20	8.35

Import File : ... \StowAway\Selway 2001\Moose Creek 2001.txt

Calibration Factor : 0.04

DEQ Summary of Temperature Data

Data Source: DEQ
Water Body: Moose Creek
Data Collection Site: near mouth
Data Period: 1/1/01 - 12/30/01

HUC4 Number: 17060302
HUC4 Name: Lower Selway
North of the Salmon Clearwater Divide
Idaho Bull Trout Elevation: 680 M
Waterbody ID Number: 27

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
296	23-Oct-01	7.12	5.25	6.09		20	8.09
297	24-Oct-01	7.27	4.47	5.32		20	7.69
298	25-Oct-01	5.57	3.69	4.56		20	7.40
299	26-Oct-01	6.81	3.85	4.86		20	7.36
300	27-Oct-01	5.25	3.38	4.23		20	6.74
301	28-Oct-01	5.72	4.94	5.32		21	6.50
302	29-Oct-01	6.65	5.25	5.90		20	6.34
303	30-Oct-01	6.97	6.34	6.61		20	6.32
304	31-Oct-01	6.97	6.50	6.71		20	6.28
305	1-Nov-01	6.81	5.88	6.30		20	6.45
306	2-Nov-01	6.97	5.88	6.39		20	6.48
307	3-Nov-01	7.89	5.88	6.71		20	6.85
308	4-Nov-01	6.50	4.63	5.36		20	6.97
309	5-Nov-01	5.57	3.69	4.52		20	6.81
310	6-Nov-01	5.72	4.47	5.09		20	6.63
311	7-Nov-01	5.72	3.07	4.63		20	6.45
312	8-Nov-01	3.53	1.33	2.23		20	5.99
313	9-Nov-01	2.75	0.53	1.31		20	5.38
314	10-Nov-01	2.43	0.04	0.97		20	4.60
315	11-Nov-01	2.43	0.20	1.01		20	4.02
316	12-Nov-01	3.38	0.85	1.78		20	3.71
317	13-Nov-01	3.07	1.64	2.30		20	3.33
318	14-Nov-01	4.63	2.75	3.60		20	3.17
319	15-Nov-01	5.10	3.69	4.17		20	3.40
320	16-Nov-01	4.94	3.22	4.02		20	3.71
321	17-Nov-01	5.57	4.63	4.93		20	4.16
322	18-Nov-01	6.19	4.00	4.87		20	4.70
323	19-Nov-01	4.16	2.43	3.28		20	4.81
324	20-Nov-01	4.79	3.07	3.76		20	5.05
325	21-Nov-01	5.88	4.32	4.88		20	5.23
326	22-Nov-01	4.94	4.32	4.69		20	5.21
327	23-Nov-01	4.94	4.00	4.47		20	5.21
328	24-Nov-01	4.00	2.59	3.15		20	4.99
329	25-Nov-01	2.90	2.12	2.50		20	4.52
330	26-Nov-01	3.07	1.96	2.46		20	4.36
331	27-Nov-01	2.90	1.48	2.20		20	4.09
332	28-Nov-01	1.33	-0.11	0.39		20	3.44
333	29-Nov-01	0.53	0.04	0.19		20	2.81
334	30-Nov-01	1.48	0.37	0.81		20	2.32
335	1-Dec-01	1.33	0.85	1.06		20	1.93
336	2-Dec-01	1.80	1.00	1.34		20	1.78
337	3-Dec-01	1.96	1.33	1.62		20	1.62
338	4-Dec-01	1.48	0.37	0.82		20	1.42
339	5-Dec-01	0.69	0.04	0.34		20	1.32
340	6-Dec-01	0.37	-0.11	0.13		20	1.30
341	7-Dec-01	1.48	0.37	0.77		20	1.30
342	8-Dec-01	1.64	0.53	0.92		20	1.35
343	9-Dec-01	1.33	0.20	0.66		20	1.28
344	10-Dec-01	1.33	0.53	0.85		20	1.19
345	11-Dec-01	0.85	0.04	0.38		20	1.10
346	12-Dec-01	0.69	0.04	0.23		20	1.10

Import File : ... \StowAway\Selway 2001\Moose Creek 2001.txt
Calibration Factor : 0.04

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Moose Creek

Data Collection Site: near mouth

Data Period: 1/1/01 - 12/30/01

HUC4 Number: 17060302

HUC4 Name: Lower Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 680 M

Waterbody ID Number: 27

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
347	13-Dec-01	0.04	-0.11	0.02		20	1.05
348	14-Dec-01	0.20	0.04	0.06		20	0.87
349	15-Dec-01	0.37	0.04	0.11		20	0.69
350	16-Dec-01	0.04	-0.11	0.02		20	0.50
351	17-Dec-01	0.53	0.04	0.18		20	0.39
352	18-Dec-01	0.20	-0.11	0.07		20	0.30
353	19-Dec-01	0.53	0.04	0.12		20	0.27
354	20-Dec-01	0.53	-0.11	0.16		20	0.34
355	21-Dec-01	0.69	0.04	0.31		20	0.41
356	22-Dec-01	1.00	0.20	0.42		20	0.50
357	23-Dec-01	0.69	-0.11	0.12		20	0.60
358	24-Dec-01	0.04	0.04	0.04		20	0.53
359	25-Dec-01	0.04	0.04	0.04		20	0.50
360	26-Dec-01	0.04	-0.11	0.02		20	0.43
361	27-Dec-01	0.04	-0.11	0.03		20	0.36
362	28-Dec-01	0.04	-0.11	0.02		20	0.27
363	29-Dec-01	0.04	0.04	0.04		20	0.13
364	30-Dec-01	0.20	0.04	0.06		20	0.06

Import File : ... \StowAway\Selway 2001\Moose Creek 2001.txt

Calibration Factor : 0.04

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Running Creek

Data Collection Site: near airstrip

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 877 M

Waterbody ID Number: 8

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S-spawn	Nbr of Msrmts per day	7-Day Average of High
1	1-Jan-01	0.96	0.00	0.52		20	
2	2-Jan-01	0.00	0.00	0.00		20	
3	3-Jan-01	0.48	0.00	0.10		20	
4	4-Jan-01	1.12	0.00	0.44		20	
5	5-Jan-01	1.12	0.16	0.51		20	
6	6-Jan-01	0.48	0.00	0.10		20	
7	7-Jan-01	0.00	0.00	0.00		20	0.59
8	8-Jan-01	0.16	0.00	0.01		20	0.48
9	9-Jan-01	0.00	0.00	0.00		20	0.48
10	10-Jan-01	0.00	0.00	0.00		20	0.41
11	11-Jan-01	0.00	0.00	0.00		20	0.25
12	12-Jan-01	0.00	0.00	0.00		20	0.09
13	13-Jan-01	0.48	0.00	0.11		20	0.09
14	14-Jan-01	0.80	0.00	0.30		20	0.21
15	15-Jan-01	0.80	0.16	0.32		20	0.30
16	16-Jan-01	0.64	0.00	0.18		20	0.39
17	17-Jan-01	0.64	0.00	0.10		20	0.48
18	18-Jan-01	0.00	0.00	0.00		20	0.48
19	19-Jan-01	0.16	0.00	0.04		20	0.50
20	20-Jan-01	0.64	0.00	0.23		20	0.53
21	21-Jan-01	0.80	0.00	0.25		20	0.53
22	22-Jan-01	1.28	0.48	0.67		20	0.59
23	23-Jan-01	1.28	0.00	0.65		20	0.69
24	24-Jan-01	0.48	0.00	0.10		20	0.66
25	25-Jan-01	1.12	0.32	0.58		20	0.82
26	26-Jan-01	1.28	0.00	0.47		20	0.98
27	27-Jan-01	0.80	0.00	0.12		20	1.01
28	28-Jan-01	0.00	0.00	0.00		20	0.89
29	29-Jan-01	0.00	0.00	0.00		20	0.71
30	30-Jan-01	0.00	0.00	0.00		20	0.53
31	31-Jan-01	0.00	0.00	0.00		20	0.46
32	1-Feb-01	0.16	0.00	0.01		20	0.32
33	2-Feb-01	0.64	0.00	0.38		20	0.23
34	3-Feb-01	1.28	0.32	0.65		20	0.30
35	4-Feb-01	0.64	0.00	0.31		20	0.39
36	5-Feb-01	0.64	0.00	0.24		20	0.48
37	6-Feb-01	1.60	0.32	0.73		20	0.71
38	7-Feb-01	1.12	0.00	0.43		20	0.87
39	8-Feb-01	0.00	0.00	0.00		20	0.85
40	9-Feb-01	0.00	0.00	0.00		20	0.75
41	10-Feb-01	0.00	0.00	0.00		20	0.57
42	11-Feb-01	0.48	0.00	0.08		20	0.55
43	12-Feb-01	0.48	0.00	0.07		20	0.53
44	13-Feb-01	0.96	0.00	0.31		20	0.43
45	14-Feb-01	0.80	0.00	0.23		20	0.39
46	15-Feb-01	0.96	0.00	0.38		20	0.53
47	16-Feb-01	1.75	0.16	0.72		20	0.78

Import File : ... ay\Selway 2001\Running Creek 2001-00ed.txt

Calibration Factor : 0.06

Idaho Cold Water Aquatic Life Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
22 °C Instantaneous	1	1%	
19 °C Average	0	0%	
Days Evaluated & Date Range	80	22-Jun	21-Sep

Idaho Salmonid Spawning Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Instantaneous Spring	26	28%	
9 °C Average Spring	36	39%	
Spring Days Eval'd w/in Dates	92	15-Apr	15-Jul
13 °C Instantaneous Fall	24	30%	
9 °C Average Fall	27	33%	
Fall Days Eval'd w/in Dates	81	15-Aug	15-Nov
13 °C Instantaneous Total *	50	29%	
9 °C Average Total *	63	36%	
Tot Days Eval'd w/in Both Dates *	173		
* If spring & fall dates overlap double counting may occur.			

Idaho Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Juvnl Rearing MWMT (J)	68	76%	
Juvenile Days Eval'd w/in Dates	89	1-Jun	31-Aug
9 °C Spawning Daily Ave (S)	13	25%	
Spawning Days Eval'd w/in Dates	52	1-Sep	31-Oct

NOTES

Comments: Data from two deployments combined. Data wrapped so that fall 2000 data follows summer 2001 data. Data gap from 8-29 thru 9-9. Candidate stream for *a priori* natural. Monitored as state Outstanding Resource Water nominee. Temperature exceeds Idaho's cold water aquatic life criteria less than 10% of the critical summer period.

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Running Creek

Data Collection Site: near airstrip

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 877 M

Waterbody ID Number: 8

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
48	17-Feb-01	2.23	0.64	1.05		20	1.09
49	18-Feb-01	1.75	0.80	1.13		20	1.28
50	19-Feb-01	2.55	0.48	1.20		20	1.57
51	20-Feb-01	2.23	0.32	1.03		20	1.75
52	21-Feb-01	1.91	0.96	1.29		20	1.91
53	22-Feb-01	2.39	0.96	1.46		20	2.12
54	23-Feb-01	2.55	1.28	1.64		20	2.23
55	24-Feb-01	2.55	0.80	1.50		20	2.28
56	25-Feb-01	2.71	0.00	1.03		20	2.41
57	26-Feb-01	3.02	0.16	1.14		20	2.48
58	27-Feb-01	2.71	0.00	0.64		20	2.55
59	28-Feb-01	1.12	0.00	0.15		20	2.44
60	1-Mar-01	0.64	0.00	0.13		20	2.19
61	2-Mar-01	1.75	0.16	0.74		20	2.07
62	3-Mar-01	3.02	0.00	0.96		20	2.14
63	4-Mar-01	2.39	0.00	1.04		20	2.09
64	5-Mar-01	3.65	0.96	1.87		20	2.18
65	6-Mar-01	4.27	0.32	1.71		20	2.41
66	7-Mar-01	3.81	0.32	1.47		20	2.79
67	8-Mar-01	3.34	0.32	1.48		20	3.18
68	9-Mar-01	2.07	0.80	1.34		20	3.22
69	10-Mar-01	3.50	1.28	2.15		20	3.29
70	11-Mar-01	2.86	1.75	2.21		20	3.36
71	12-Mar-01	3.65	1.91	2.49		20	3.36
72	13-Mar-01	5.06	2.07	2.97		20	3.47
73	14-Mar-01	3.34	1.43	2.30		20	3.40
74	15-Mar-01	3.50	0.48	1.94		20	3.43
75	16-Mar-01	3.34	1.60	2.40		20	3.61
76	17-Mar-01	3.81	1.28	2.45		20	3.65
77	18-Mar-01	4.59	2.07	3.19		20	3.90
78	19-Mar-01	3.81	2.39	2.94		20	3.92
79	20-Mar-01	5.21	1.60	2.95		20	3.94
80	21-Mar-01	5.21	1.43	2.91		20	4.21
81	22-Mar-01	5.21	1.12	2.76		20	4.45
82	23-Mar-01	5.68	1.43	3.17		20	4.79
83	24-Mar-01	5.21	2.55	3.64		20	4.99
84	25-Mar-01	3.50	2.39	2.88		20	4.83
85	26-Mar-01	3.81	2.23	2.97		20	4.83
86	27-Mar-01	4.75	2.07	3.22		20	4.77
87	28-Mar-01	5.21	2.86	3.77		20	4.77
88	29-Mar-01	5.68	3.02	4.15		20	4.83
89	30-Mar-01	4.12	3.34	3.71		20	4.61
90	31-Mar-01	3.96	2.07	3.15		20	4.43
91	1-Apr-01	5.37	2.71	3.95		19	4.70
92	2-Apr-01	4.27	3.34	3.71		20	4.77
93	3-Apr-01	4.59	1.91	3.02		20	4.74
94	4-Apr-01	5.52	2.55	3.79		20	4.79
95	5-Apr-01	5.68	1.43	3.30		20	4.79
96	6-Apr-01	4.43	2.07	3.18		20	4.83
97	7-Apr-01	4.75	3.02	3.72		20	4.94

Import File : ... ay\Selway 2001\Running Creek 2001-00ed.txt

Calibration Factor : 0.06

STATISTICS	
Maximum Daily Maximum (MDM)	22.1 °C
Maximum 7-Day Maximum (MWM)	21.1 °C
Maximum Daily Average (MDA)	18.5 °C
Maximum 7-Day Average (MWA)	17.7 °C
Mean Daily Maximum	7.4 °C
Mean Daily Average	5.9 °C
Mean Daily Minimum	4.8 °C
Minimum 7-Day Minimum	0.0 °C
Minimum Daily Minimum	0.0 °C
Mean of all Data	5.9 °C

EPA Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
10 °C 7-Day Avg of Daily Max	96	87%	
Nmbr of 7-Day Avg's w/in Dates	110	1-Jun	30-Sep

Seasonal Cold Water Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
26 °C Instantaneous	0	0%	
23 °C Average	0	0%	
Days Evaluated and Date Range	80	22-Jun	21-Sep

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Running Creek

Data Collection Site: near airstrip

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 877 M

Waterbody ID Number: 8

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
98	8-Apr-01	4.27	2.55	3.28		20	4.79
99	9-Apr-01	3.81	2.07	2.93		20	4.72
100	10-Apr-01	5.21	2.23	3.47		20	4.81
101	11-Apr-01	3.96	2.39	3.30		20	4.59
102	12-Apr-01	4.43	2.39	3.27		20	4.41
103	13-Apr-01	4.75	2.39	3.48		20	4.45
104	14-Apr-01	5.68	2.23	3.67		20	4.59
105	15-Apr-01	6.92	1.75	3.94		20	4.97
106	16-Apr-01	7.08	2.23	4.40		20	5.43
107	17-Apr-01	7.85	3.34	5.42		20	5.81
108	18-Apr-01	6.77	4.12	5.51		20	6.21
109	19-Apr-01	5.83	4.27	5.12		20	6.41
110	20-Apr-01	4.90	3.02	4.06		20	6.43
111	21-Apr-01	5.52	3.18	4.33		20	6.41
112	22-Apr-01	5.83	2.86	4.44		20	6.25
113	23-Apr-01	6.77	4.12	5.30		20	6.21
114	24-Apr-01	9.40	4.59	6.54		20	6.43
115	25-Apr-01	8.93	3.96	6.26		20	6.74
116	26-Apr-01	7.54	4.12	5.82		20	6.98
117	27-Apr-01	6.61	4.43	5.43		20	7.23
118	28-Apr-01	5.68	3.81	4.78		20	7.25
119	29-Apr-01	5.52	3.50	4.54		20	7.21
120	30-Apr-01	5.21	4.27	4.75		20	6.98
121	1-May-01	4.43	3.34	3.91		20	6.27
122	2-May-01	5.21	2.86	3.84		20	5.74
123	3-May-01	6.30	2.55	4.22		20	5.57
124	4-May-01	7.38	3.50	5.19		20	5.68
125	5-May-01	6.46	4.90	5.55		20	5.79
126	6-May-01	6.61	3.18	4.72		20	5.94
127	7-May-01	7.38	3.34	5.15		20	6.25
128	8-May-01	7.38	4.27	5.86		20	6.67
129	9-May-01	7.54	4.59	5.94		20	7.01
130	10-May-01	8.01	4.27	5.99		20	7.25
131	11-May-01	8.01	4.12	5.96		20	7.34
132	12-May-01	8.16	4.59	6.26		20	7.58
133	13-May-01	8.01	5.37	6.52		20	7.78
134	14-May-01	6.92	5.21	6.07		20	7.72
135	15-May-01	6.30	5.06	5.73		20	7.56
136	16-May-01	6.61	5.06	5.73		20	7.43
137	17-May-01	7.08	3.50	5.30		20	7.30
138	18-May-01	6.77	5.21	5.87		20	7.12
139	19-May-01	8.31	4.12	6.06		20	7.14
140	20-May-01	7.23	5.37	6.35		20	7.03
141	21-May-01	8.47	3.65	5.93		20	7.25
142	22-May-01	10.17	4.90	7.22		20	7.81
143	23-May-01	10.80	5.68	8.05		20	8.40
144	24-May-01	9.86	6.30	8.20		20	8.80
145	25-May-01	10.64	7.08	8.68		20	9.35
146	26-May-01	10.17	6.77	8.40		20	9.62
147	27-May-01	9.55	7.08	8.41		20	9.95
148	28-May-01	10.33	7.08	8.62		20	10.22

Import File : ... ay\Selway 2001\Running Creek 2001-00ed.txt
Calibration Factor : 0.06

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Running Creek

Data Collection Site: near airstrip

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 877 M

Waterbody ID Number: 8

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
149	29-May-01	9.24	6.92	8.19		20	10.08
150	30-May-01	9.08	4.90	6.93		20	9.84
151	31-May-01	11.56	7.38	9.10		20	10.08
152	1-Jun-01	11.41	7.70	9.57		20	10.19
153	2-Jun-01	10.80	8.31	9.15		20	10.28
154	3-Jun-01	8.16	6.77	7.23		20	10.08
155	4-Jun-01	6.61	4.75	5.41		20	9.55
156	5-Jun-01	6.77	4.59	5.63		20	9.20
157	6-Jun-01	9.08	5.83	7.19		20	9.20
158	7-Jun-01	8.16	6.15	7.11		20	8.71
159	8-Jun-01	10.64	6.46	8.31		20	8.60
160	9-Jun-01	11.41	8.62	9.89		20	8.69
161	10-Jun-01	10.17	8.47	9.46		20	8.98
162	11-Jun-01	10.17	8.16	9.09		20	9.49
163	12-Jun-01	8.93	6.61	7.73		20	9.79
164	13-Jun-01	6.92	5.37	6.12		20	9.49
165	14-Jun-01	7.85	5.83	6.81		20	9.44
166	15-Jun-01	11.41	6.92	8.63		20	9.55
167	16-Jun-01	12.18	7.08	9.36		20	9.66
168	17-Jun-01	12.03	8.62	10.23		20	9.93
169	18-Jun-01	12.18	8.16	9.98		20	10.21
170	19-Jun-01	12.34	7.54	9.75		20	10.70
171	20-Jun-01	13.73	8.47	10.75		20	11.67
172	21-Jun-01	14.98	9.71	12.05		20	12.69
173	22-Jun-01	16.26	11.10	13.32	J	20	13.39
174	23-Jun-01	16.10	12.03	13.89	J	20	13.95
175	24-Jun-01	14.82	12.03	13.43	J	20	14.34
176	25-Jun-01	14.98	10.95	12.91	J	20	14.74
177	26-Jun-01	15.46	11.72	13.47	J	20	15.19
178	27-Jun-01	15.15	12.18	13.59	J	20	15.39
179	28-Jun-01	17.37	12.50	14.58	J	20	15.73
180	29-Jun-01	17.68	12.50	14.83	J	20	15.94
181	30-Jun-01	17.05	12.96	15.01	J	20	16.07
182	1-Jul-01	18.98	13.58	15.90	J	20	16.67
183	2-Jul-01	18.98	13.73	16.17	J	20	17.24
184	3-Jul-01	19.47	13.88	16.45	J	20	17.81
185	4-Jul-01	18.01	14.82	16.24	J	20	18.22
186	5-Jul-01	16.41	15.15	15.68	J	20	18.08
187	6-Jul-01	17.85	13.27	15.43	J	20	18.11
188	7-Jul-01	17.85	12.96	15.37	J	20	18.22
189	8-Jul-01	18.01	14.51	16.14	J	20	18.08
190	9-Jul-01	18.33	14.98	16.47	J	20	17.99
191	10-Jul-01	19.95	14.98	17.27	J	20	18.06
192	11-Jul-01	18.65	14.67	16.62	J	20	18.15
193	12-Jul-01	18.65	14.98	16.66	J	20	18.47
194	13-Jul-01	16.89	14.35	15.68	J	20	18.33
195	14-Jul-01	19.14	13.42	15.98	J	20	18.52
196	15-Jul-01	17.05	14.98	16.08	J	20	18.38
197	16-Jul-01	15.15	13.73	14.38	J	20	17.93

Import File : ... ay\Selway 2001\Running Creek 2001-00ed.txt
Calibration Factor : 0.06

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Running Creek

Data Collection Site: near airstrip

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 877 M

Waterbody ID Number: 8

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn		Nbr of Msr mts per day	7-Day Averag e of High
198	17-Jul-01	15.62	12.03	13.66	J		20	17.31
199	18-Jul-01	15.46	12.18	13.67	J		20	16.85
200	19-Jul-01	17.68	12.18	14.51	J		20	16.71
201	20-Jul-01	17.68	13.27	15.30	J		20	16.83
202	21-Jul-01	18.82	13.73	15.78	J		20	16.78
203	22-Jul-01	18.82	13.73	15.95	J		20	17.03
204	23-Jul-01	18.49	13.12	15.64	J		20	17.51
205	24-Jul-01	18.65	13.27	15.83	J		20	17.94
206	25-Jul-01	19.79	13.73	16.38	J		20	18.56
207	26-Jul-01	19.79	13.73	16.52	J		20	18.86
208	27-Jul-01	20.11	13.73	16.65	J		20	19.21
209	28-Jul-01	17.68	14.35	16.14	J		20	19.05
210	29-Jul-01	16.73	12.96	14.95	J		20	18.75
211	30-Jul-01	14.67	12.96	13.67	J		20	18.20
212	31-Jul-01	15.31	12.34	13.31	J		20	17.73
213	1-Aug-01	16.89	10.95	13.67	J		20	17.31
214	2-Aug-01	19.14	12.65	15.46	J		20	17.22
215	3-Aug-01	18.49	13.58	16.04	J		20	16.99
216	4-Aug-01	18.65	14.35	16.30	J		20	17.13
217	5-Aug-01	20.27	13.58	16.53	J		20	17.63
218	6-Aug-01	21.26	14.20	17.32	J		20	18.57
219	7-Aug-01	21.76	15.15	18.10	J		20	19.49
220	8-Aug-01	22.10	15.78	18.53	J		20	20.24
221	9-Aug-01	20.43	14.82	17.48	J		20	20.42
222	10-Aug-01	21.10	14.35	17.34	J		20	20.80
223	11-Aug-01	19.79	14.20	16.94	J		20	20.96
224	12-Aug-01	20.93	14.20	17.22	J		20	21.05
225	13-Aug-01	20.60	15.94	18.13	J		20	20.96
226	14-Aug-01	19.95	15.46	17.66	J		20	20.70
227	15-Aug-01	20.93	14.67	17.43	J		20	20.53
228	16-Aug-01	21.10	14.51	17.45	J		20	20.63
229	17-Aug-01	21.10	14.20	17.29	J		20	20.63
230	18-Aug-01	21.10	14.98	17.68	J		20	20.82
231	19-Aug-01	20.11	14.04	16.85	J		20	20.70
232	20-Aug-01	19.30	12.81	15.85	J		20	20.51
233	21-Aug-01	19.30	12.65	15.73	J		20	20.42
234	22-Aug-01	18.49	12.96	15.64	J		20	20.07
235	23-Aug-01	18.65	13.12	15.72	J		20	19.72
236	24-Aug-01	19.79	14.20	16.47	J		20	19.53
237	25-Aug-01	19.47	12.50	15.69	J		20	19.30
238	26-Aug-01	19.79	12.65	15.85	J		20	19.26
239	27-Aug-01	20.11	13.42	16.36	J		20	19.37
240	28-Aug-01	17.37	13.58	15.17	J		13	19.10
241	10-Sep-01	10.64	8.62	9.51		S	20	17.97
242	11-Sep-01	13.27	9.55	10.85		S	20	17.21
243	12-Sep-01	15.15	8.77	11.46		S	20	16.54
244	13-Sep-01	17.05	9.71	12.63		S	20	16.20
245	14-Sep-01	17.52	10.33	13.18		S	20	15.87
246	15-Sep-01	17.68	10.64	13.66		S	20	15.53

Import File : ... ay\Selway 2001\Running Creek 2001-00ed.txt
Calibration Factor : 0.06

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Running Creek

Data Collection Site: near airstrip

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 877 M

Waterbody ID Number: 8

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
247	16-Sep-01	18.98	12.03	14.71	S	20	15.76
248	17-Sep-01	18.98	12.65	14.89	S	20	16.95
249	18-Sep-01	14.82	11.41	13.18	S	20	17.17
250	19-Sep-01	15.62	12.81	13.93	S	20	17.24
251	20-Sep-01	14.20	9.71	11.83	S	20	16.83
252	21-Sep-01	12.65	10.02	11.33	S	20	16.13
253	22-Sep-01	10.33	7.38	8.73		20	15.08
254	23-Sep-01	10.64	4.27	6.87		20	13.89
255	24-Sep-01	10.33	3.34	6.10		20	12.66
256	25-Sep-01	10.80	3.65	6.53		20	12.08
257	26-Sep-01	11.25	4.12	6.89		20	11.46
258	27-Sep-01	11.56	4.27	7.06		20	11.08
259	28-Sep-01	10.33	4.75	7.28		20	10.75
260	29-Sep-01	10.02	5.83	7.75		20	10.70
261	30-Sep-01	9.86	7.54	8.59		20	10.59
262	1-Oct-01	10.02	9.08	9.48	S	20	10.55
263	2-Oct-01	9.40	7.54	8.45		20	10.35
264	3-Oct-01	9.08	6.77	7.64		20	10.04
265	4-Oct-01	7.08	4.90	6.07		20	9.40
266	5-Oct-01	7.08	3.81	5.27		20	8.93
267	6-Oct-01	6.30	2.86	4.34		20	8.40
268	7-Oct-01	6.46	2.55	4.17		20	7.92
269	8-Oct-01	6.92	2.86	4.59		20	7.47
270	9-Oct-01	7.23	3.50	5.06		20	7.16
271	10-Oct-01	7.70	5.21	6.25		20	6.97
272	11-Oct-01	8.31	6.77	7.45		20	7.14
273	12-Oct-01	7.54	7.08	7.32		20	7.21
274	13-Oct-01	7.08	6.30	6.64		20	7.32
275	14-Oct-01	7.23	6.15	6.67		20	7.43
276	15-Oct-01	7.70	5.83	6.74		20	7.54
277	16-Oct-01	7.38	5.06	6.14		20	7.56
278	17-Oct-01	7.38	4.90	5.93		20	7.52
279	18-Oct-01	7.08	4.75	5.95		20	7.34
280	19-Oct-01	9.08	6.61	7.32		20	7.56
281	20-Oct-01	7.23	5.52	6.35		20	7.58
282	21-Oct-01	7.23	5.99	6.80		20	7.58
283	22-Oct-01	6.30	3.96	5.18		20	7.38
284	23-Oct-01	4.27	2.07	3.09		20	6.94
285	24-Oct-01	4.27	1.91	2.84		20	6.49
286	25-Oct-01	4.27	1.91	2.88		20	6.09
287	26-Oct-01	4.59	2.23	3.32		20	5.45
288	27-Oct-01	5.83	4.12	4.74		20	5.25
289	28-Oct-01	4.75	3.02	4.05		20	4.90
290	29-Oct-01	6.15	4.59	5.29		21	4.88
291	30-Oct-01	6.15	4.90	5.41		20	5.14
292	31-Oct-01	5.99	4.75	5.17		20	5.39
293	1-Nov-01	4.90	3.18	4.21		20	5.48
294	2-Nov-01	3.65	1.43	2.45		20	5.35
295	3-Nov-01	3.02	0.96	1.59		20	4.94
296	4-Nov-01	1.91	0.48	1.32		20	4.54

Import File : ... ay\Selway 2001\Running Creek 2001-00ed.txt
Calibration Factor : 0.06

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Running Creek

Data Collection Site: near airstrip

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 877 M

Waterbody ID Number: 8

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
297	5-Nov-01	2.23	1.43	1.82		20	3.98
298	6-Nov-01	3.02	1.43	2.01		20	3.53
299	7-Nov-01	3.02	0.64	1.77		20	3.11
300	8-Nov-01	0.64	0.00	0.18		20	2.50
301	9-Nov-01	1.43	0.00	0.54		20	2.18
302	10-Nov-01	0.16	0.00	0.06		20	1.77
303	11-Nov-01	0.00	0.00	0.00		20	1.50
304	12-Nov-01	0.16	0.00	0.01		20	1.20
305	13-Nov-01	0.16	0.00	0.01		20	0.80
306	14-Nov-01	0.00	0.00	0.00		20	0.36
307	15-Nov-01	0.00	0.00	0.00		20	0.27
308	16-Nov-01	0.16	0.00	0.04		20	0.09
309	17-Nov-01	0.16	0.00	0.03		20	0.09
310	18-Nov-01	0.00	0.00	0.00		20	0.09
311	19-Nov-01	0.16	0.00	0.01		20	0.09
312	20-Nov-01	0.00	0.00	0.00		20	0.07
313	21-Nov-01	0.00	0.00	0.00		20	0.07
314	22-Nov-01	0.00	0.00	0.00		20	0.07
315	23-Nov-01	0.00	0.00	0.00		20	0.05
316	24-Nov-01	0.00	0.00	0.00		20	0.02
317	25-Nov-01	0.16	0.00	0.02		20	0.05
318	26-Nov-01	0.16	0.00	0.02		20	0.05
319	27-Nov-01	0.16	0.00	0.06		20	0.07
320	28-Nov-01	0.32	0.00	0.05		20	0.11
321	29-Nov-01	0.00	0.00	0.00		20	0.11
322	30-Nov-01	0.48	0.00	0.17		20	0.18
323	1-Dec-01	0.64	0.00	0.33		20	0.27
324	2-Dec-01	0.00	0.00	0.00		20	0.25
325	3-Dec-01	0.48	0.00	0.14		20	0.30
326	4-Dec-01	0.96	0.32	0.58		20	0.41
327	5-Dec-01	1.12	0.16	0.54		20	0.53
328	6-Dec-01	0.64	0.00	0.34		20	0.62
329	7-Dec-01	0.00	0.00	0.00		20	0.55
330	8-Dec-01	0.00	0.00	0.00		20	0.46
331	9-Dec-01	0.16	0.00	0.02		20	0.48
332	10-Dec-01	0.80	0.00	0.34		20	0.53
333	11-Dec-01	0.00	0.00	0.00		20	0.39
334	12-Dec-01	0.00	0.00	0.00		20	0.23
335	13-Dec-01	0.00	0.00	0.00		20	0.14
336	14-Dec-01	0.00	0.00	0.00		20	0.14
337	15-Dec-01	0.00	0.00	0.00		20	0.14
338	16-Dec-01	0.00	0.00	0.00		20	0.11
339	17-Dec-01	0.00	0.00	0.00		20	0.00
340	18-Dec-01	0.00	0.00	0.00		20	0.00
341	19-Dec-01	0.00	0.00	0.00		20	0.00
342	20-Dec-01	0.00	0.00	0.00		20	0.00
343	21-Dec-01	0.00	0.00	0.00		20	0.00
344	22-Dec-01	0.00	0.00	0.00		20	0.00
345	23-Dec-01	0.00	0.00	0.00		20	0.00
346	24-Dec-01	0.48	0.00	0.16		20	0.07
347	25-Dec-01	0.96	0.48	0.57		20	0.21

Import File : ... ay\Selway 2001\Running Creek 2001-00ed.txt
Calibration Factor : 0.06

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Running Creek

Data Collection Site: near airstrip

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 877 M

Waterbody ID Number: 8

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
348	26-Dec-01	0.64	0.00	0.28		20	0.30
349	27-Dec-01	0.80	0.00	0.33		20	0.41
350	28-Dec-01	1.12	0.16	0.61		20	0.57
351	29-Dec-01	0.16	0.00	0.02		20	0.59
352	30-Dec-01	0.80	0.16	0.45		20	0.71
353	31-Dec-01	0.96	0.32	0.67		20	0.78

Import File : ... ay\Selway 2001\Running Creek 2001-00ed.txt

Calibration Factor : 0.06

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Bear Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 760 M

Waterbody ID Number: 4

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
1	1-Jan-01	0.00	0.00	0.00		20	
2	2-Jan-01	0.00	0.00	0.00		20	
3	3-Jan-01	0.00	0.00	0.00		20	
4	4-Jan-01	0.00	0.00	0.00		20	
5	5-Jan-01	0.00	0.00	0.00		20	
6	6-Jan-01	0.00	0.00	0.00		20	
7	7-Jan-01	0.00	0.00	0.00		20	0.00
8	8-Jan-01	0.00	0.00	0.00		20	0.00
9	9-Jan-01	0.00	0.00	0.00		20	0.00
10	10-Jan-01	0.00	0.00	0.00		20	0.00
11	11-Jan-01	0.00	0.00	0.00		20	0.00
12	12-Jan-01	0.00	0.00	0.00		20	0.00
13	13-Jan-01	0.00	0.00	0.00		20	0.00
14	14-Jan-01	0.00	0.00	0.00		20	0.00
15	15-Jan-01	0.00	0.00	0.00		20	0.00
16	16-Jan-01	0.00	0.00	0.00		20	0.00
17	17-Jan-01	0.00	0.00	0.00		20	0.00
18	18-Jan-01	0.00	0.00	0.00		20	0.00
19	19-Jan-01	0.00	0.00	0.00		20	0.00
20	20-Jan-01	0.00	0.00	0.00		20	0.00
21	21-Jan-01	0.00	0.00	0.00		20	0.00
22	22-Jan-01	0.00	0.00	0.00		20	0.00
23	23-Jan-01	0.00	0.00	0.00		20	0.00
24	24-Jan-01	0.00	0.00	0.00		20	0.00
25	25-Jan-01	0.00	0.00	0.00		20	0.00
26	26-Jan-01	0.00	0.00	0.00		20	0.00
27	27-Jan-01	0.00	0.00	0.00		20	0.00
28	28-Jan-01	0.00	0.00	0.00		20	0.00
29	29-Jan-01	0.00	0.00	0.00		20	0.00
30	30-Jan-01	0.00	0.00	0.00		20	0.00
31	31-Jan-01	0.00	0.00	0.00		20	0.00
32	1-Feb-01	0.00	0.00	0.00		20	0.00
33	2-Feb-01	0.00	0.00	0.00		20	0.00
34	3-Feb-01	0.00	0.00	0.00		20	0.00
35	4-Feb-01	0.00	0.00	0.00		20	0.00
36	5-Feb-01	0.00	0.00	0.00		20	0.00
37	6-Feb-01	0.00	0.00	0.00		20	0.00
38	7-Feb-01	0.00	0.00	0.00		20	0.00
39	8-Feb-01	0.00	0.00	0.00		20	0.00
40	9-Feb-01	0.00	0.00	0.00		20	0.00
41	10-Feb-01	0.00	0.00	0.00		20	0.00
42	11-Feb-01	0.00	0.00	0.00		20	0.00
43	12-Feb-01	0.00	0.00	0.00		20	0.00
44	13-Feb-01	0.00	0.00	0.00		20	0.00
45	14-Feb-01	0.00	0.00	0.00		20	0.00
46	15-Feb-01	0.00	0.00	0.00		20	0.00
47	16-Feb-01	0.00	0.00	0.00		20	0.00

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt

Calibration Factor : 0.08

Idaho Cold Water Aquatic Life Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
22 °C Instantaneous	12	13%	
19 °C Average	15	16%	
Days Evaluated & Date Range	92	22-Jun	21-Sep

Idaho Salmonid Spawning Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Instantaneous Spring	29	32%	
9 °C Average Spring	43	47%	
Spring Days Eval'd w/in Dates	92	15-Apr	15-Jul
13 °C Instantaneous Fall	48	52%	
9 °C Average Fall	51	55%	
Fall Days Eval'd w/in Dates	93	15-Aug	15-Nov
13 °C Instantaneous Total *	77	42%	
9 °C Average Total *	94	51%	
Tot Days Eval'd w/in Both Dates *	185		
* If spring & fall dates overlap double counting may occur.			

Idaho Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Juvnl Rearing MWMT (J)	72	78%	
Juvenile Days Eval'd w/in Dates	92	1-Jun	31-Aug
9 °C Spawning Daily Ave (S)	34	56%	
Spawning Days Eval'd w/in Dates	61	1-Sep	31-Oct

NOTES

Comments: Combined data from two deployments. Stream is a priori natural. Monitored as state Outstanding Resource Water nominee.

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Bear Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 760 M

Waterbody ID Number: 4

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
48	17-Feb-01	0.16	0.00	0.03		20	0.02
49	18-Feb-01	0.16	0.00	0.05		20	0.05
50	19-Feb-01	0.32	0.00	0.06		20	0.09
51	20-Feb-01	0.16	0.00	0.04		20	0.11
52	21-Feb-01	0.16	0.00	0.10		20	0.14
53	22-Feb-01	0.48	0.00	0.22		20	0.21
54	23-Feb-01	0.96	0.16	0.50		20	0.34
55	24-Feb-01	1.60	0.16	0.79		20	0.55
56	25-Feb-01	1.28	0.00	0.58		20	0.71
57	26-Feb-01	2.08	0.00	0.92		20	0.96
58	27-Feb-01	1.60	0.00	0.58		20	1.17
59	28-Feb-01	1.28	0.00	0.29		20	1.33
60	1-Mar-01	1.28	0.00	0.35		20	1.44
61	2-Mar-01	1.76	0.00	0.62		20	1.55
62	3-Mar-01	2.55	0.00	1.01		20	1.69
63	4-Mar-01	2.24	0.00	1.07		20	1.83
64	5-Mar-01	3.03	0.48	1.64		20	1.96
65	6-Mar-01	3.18	0.00	1.49		20	2.19
66	7-Mar-01	3.03	0.00	1.31		20	2.44
67	8-Mar-01	3.18	0.00	1.39		20	2.71
68	9-Mar-01	2.08	1.13	1.61		20	2.76
69	10-Mar-01	3.18	1.13	2.05		20	2.85
70	11-Mar-01	2.86	1.76	2.31		20	2.93
71	12-Mar-01	3.81	1.92	2.61		20	3.05
72	13-Mar-01	4.91	2.39	3.45		20	3.29
73	14-Mar-01	3.81	2.24	3.09		20	3.40
74	15-Mar-01	3.81	1.28	2.53		20	3.49
75	16-Mar-01	4.13	2.08	2.98		20	3.79
76	17-Mar-01	4.13	1.76	2.86		20	3.92
77	18-Mar-01	5.38	2.86	4.00		20	4.28
78	19-Mar-01	4.60	3.50	4.06		20	4.40
79	20-Mar-01	5.84	2.71	4.07		20	4.53
80	21-Mar-01	5.53	1.76	3.52		20	4.77
81	22-Mar-01	5.69	1.44	3.43		20	5.04
82	23-Mar-01	6.15	1.92	3.87		20	5.33
83	24-Mar-01	6.31	3.34	4.76		20	5.64
84	25-Mar-01	4.60	3.03	3.56		20	5.53
85	26-Mar-01	4.28	3.03	3.54		20	5.49
86	27-Mar-01	5.38	2.71	4.04		20	5.42
87	28-Mar-01	5.84	3.65	4.73		20	5.46
88	29-Mar-01	6.78	4.13	5.24		20	5.62
89	30-Mar-01	5.53	4.28	4.92		20	5.53
90	31-Mar-01	4.60	2.86	3.81		20	5.29
91	1-Apr-01	6.62	3.50	4.84		19	5.58
92	2-Apr-01	5.69	3.97	4.61		20	5.78
93	3-Apr-01	5.84	2.55	3.95		20	5.84
94	4-Apr-01	6.31	3.34	4.61		20	5.91
95	5-Apr-01	6.62	2.24	4.32		20	5.89
96	6-Apr-01	4.91	3.18	4.13		20	5.80
97	7-Apr-01	5.53	3.97	4.60		20	5.93

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt

Calibration Factor : 0.08

STATISTICS	
Maximum Daily Maximum (MDM)	23.6 °C
Maximum 7-Day Maximum (MWM)	22.7 °C
Maximum Daily Average (MDA)	20.9 °C
Maximum 7-Day Average (MWA)	20.0 °C
Mean Daily Maximum	8.6 °C
Mean Daily Average	7.4 °C
Mean Daily Minimum	6.2 °C
Minimum 7-Day Minimum	-0.1 °C
Minimum Daily Minimum	-0.1 °C
Mean of all Data	7.4 °C

EPA Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
10 °C 7-Day Avg of Daily Max	117	96%	
Nmbr of 7-Day Avg's w/in Dates	122	1-Jun	30-Sep

Seasonal Cold Water Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
26 °C Instantaneous	0	0%	
23 °C Average	0	0%	
Days Evaluated and Date Range	92	22-Jun	21-Sep

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Bear Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 760 M

Waterbody ID Number: 4

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
98	8-Apr-01	5.06	3.03	3.97		20	5.71
99	9-Apr-01	5.06	2.86	3.83		20	5.62
100	10-Apr-01	5.53	2.86	4.16		20	5.57
101	11-Apr-01	5.06	3.50	4.35		20	5.40
102	12-Apr-01	5.38	3.65	4.39		20	5.22
103	13-Apr-01	5.84	3.50	4.41		20	5.35
104	14-Apr-01	6.78	3.03	4.52		20	5.53
105	15-Apr-01	7.86	3.03	5.24		20	5.93
106	16-Apr-01	8.01	3.81	5.87		20	6.35
107	17-Apr-01	8.94	5.06	6.89		20	6.84
108	18-Apr-01	8.16	6.15	7.31		20	7.28
109	19-Apr-01	7.55	5.53	6.64		20	7.59
110	20-Apr-01	6.15	4.28	5.23		20	7.64
111	21-Apr-01	6.93	4.13	5.42		20	7.66
112	22-Apr-01	7.24	4.13	5.57		20	7.57
113	23-Apr-01	8.01	5.38	6.47		20	7.57
114	24-Apr-01	10.49	6.15	8.03		20	7.79
115	25-Apr-01	10.03	6.00	8.16		20	8.06
116	26-Apr-01	8.78	5.69	7.45		20	8.23
117	27-Apr-01	7.70	5.22	6.67		20	8.45
118	28-Apr-01	6.78	4.44	5.58		20	8.43
119	29-Apr-01	6.15	4.13	5.19		20	8.28
120	30-Apr-01	5.84	4.91	5.40		20	7.97
121	1-May-01	5.38	4.13	4.65		20	7.24
122	2-May-01	5.84	3.50	4.52		20	6.64
123	3-May-01	7.24	3.18	5.11		20	6.42
124	4-May-01	8.48	4.44	6.33		20	6.53
125	5-May-01	7.70	6.00	6.76		20	6.66
126	6-May-01	7.55	3.65	5.58		20	6.86
127	7-May-01	8.32	4.28	6.27		20	7.22
128	8-May-01	8.48	5.53	7.15		20	7.66
129	9-May-01	8.32	5.84	7.24		20	8.01
130	10-May-01	8.78	5.53	7.16		20	8.23
131	11-May-01	8.63	5.06	6.92		20	8.25
132	12-May-01	8.78	5.53	7.23		20	8.41
133	13-May-01	8.48	6.31	7.38		20	8.54
134	14-May-01	7.55	5.53	6.66		20	8.43
135	15-May-01	7.09	5.69	6.49		20	8.23
136	16-May-01	6.93	5.84	6.40		20	8.03
137	17-May-01	7.39	4.28	5.84		20	7.84
138	18-May-01	7.86	6.15	6.89		20	7.73
139	19-May-01	8.78	5.38	6.98		20	7.73
140	20-May-01	8.63	6.62	7.64		20	7.75
141	21-May-01	8.78	4.75	6.76		20	7.92
142	22-May-01	10.34	6.15	8.14		20	8.39
143	23-May-01	10.95	6.78	8.93		20	8.96
144	24-May-01	10.18	7.09	8.96		20	9.36
145	25-May-01	10.95	7.70	9.32		20	9.80
146	26-May-01	10.80	7.39	9.13		20	10.09
147	27-May-01	10.18	8.01	9.33		20	10.31
148	28-May-01	11.26	7.86	9.51		20	10.67

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt
Calibration Factor : 0.08

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Bear Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 760 M

Waterbody ID Number: 4

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
149	29-May-01	10.49	8.16	9.35		20	10.69
150	30-May-01	9.56	5.84	7.78		20	10.49
151	31-May-01	12.35	8.32	10.08		20	10.80
152	1-Jun-01	12.04	8.78	10.57		20	10.95
153	2-Jun-01	11.57	9.56	10.39		20	11.06
154	3-Jun-01	9.87	7.39	8.44		20	11.02
155	4-Jun-01	7.09	5.06	5.79		20	10.42
156	5-Jun-01	7.39	5.22	6.28		20	9.98
157	6-Jun-01	9.87	6.78	8.09		20	10.03
158	7-Jun-01	9.09	7.24	8.14		20	9.56
159	8-Jun-01	11.73	7.55	9.43		20	9.52
160	9-Jun-01	12.50	9.87	11.16		20	9.65
161	10-Jun-01	11.73	9.71	10.76		20	9.91
162	11-Jun-01	11.41	9.56	10.54		20	10.53
163	12-Jun-01	10.18	7.55	8.83		20	10.93
164	13-Jun-01	7.24	5.84	6.60		20	10.55
165	14-Jun-01	9.09	6.46	7.66		20	10.55
166	15-Jun-01	12.19	7.70	9.60		20	10.62
167	16-Jun-01	12.97	8.32	10.60		20	10.69
168	17-Jun-01	13.28	10.03	11.64		20	10.91
169	18-Jun-01	13.28	9.56	11.45		20	11.18
170	19-Jun-01	13.28	8.78	11.13		20	11.62
171	20-Jun-01	14.51	9.71	12.06		20	12.66
172	21-Jun-01	16.10	11.11	13.53	J	20	13.66
173	22-Jun-01	17.21	12.50	14.87	J	20	14.38
174	23-Jun-01	17.05	13.43	15.43	J	20	14.96
175	24-Jun-01	16.25	13.59	15.07	J	20	15.38
176	25-Jun-01	16.10	12.19	14.18	J	20	15.79
177	26-Jun-01	17.21	12.97	15.02	J	20	16.35
178	27-Jun-01	16.73	13.59	15.27	J	20	16.66
179	28-Jun-01	18.01	14.05	15.94	J	20	16.94
180	29-Jun-01	18.83	13.89	16.36	J	20	17.17
181	30-Jun-01	18.66	14.67	16.78	J	20	17.40
182	1-Jul-01	20.28	14.99	17.53	J	20	17.97
183	2-Jul-01	20.60	15.62	18.17	J	20	18.62
184	3-Jul-01	21.26	15.78	18.55	J	20	19.20
185	4-Jul-01	19.63	16.89	18.32	J	20	19.61
186	5-Jul-01	18.50	16.58	17.12	J	20	19.68
187	6-Jul-01	19.95	14.51	16.87	J	20	19.84
188	7-Jul-01	19.47	14.67	17.20	J	20	19.96
189	8-Jul-01	20.28	15.94	17.89	J	20	19.96
190	9-Jul-01	19.95	16.58	18.19	J	20	19.86
191	10-Jul-01	22.60	16.89	19.56	J	20	20.05
192	11-Jul-01	20.44	17.05	18.85	J	20	20.17
193	12-Jul-01	20.28	16.89	18.50	J	20	20.42
194	13-Jul-01	18.66	15.94	17.41	J	20	20.24
195	14-Jul-01	21.26	14.99	17.83	J	20	20.50
196	15-Jul-01	19.63	17.21	18.19	J	20	20.40
197	16-Jul-01	16.89	15.15	15.76	J	20	19.97

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt
Calibration Factor : 0.08

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Bear Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 760 M

Waterbody ID Number: 4

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn		Nbr of Msr mts per day	7-Day Averag e of High
198	17-Jul-01	16.89	13.13	14.83	J		20	19.15
199	18-Jul-01	16.73	13.74	15.24	J		20	18.62
200	19-Jul-01	19.95	14.20	16.73	J		20	18.57
201	20-Jul-01	19.95	15.78	17.72	J		20	18.76
202	21-Jul-01	20.76	15.94	17.98	J		20	18.66
203	22-Jul-01	20.93	15.94	18.33	J		20	18.87
204	23-Jul-01	21.10	15.46	18.27	J		20	19.47
205	24-Jul-01	20.76	15.46	18.18	J		20	20.03
206	25-Jul-01	21.93	16.10	18.90	J		20	20.77
207	26-Jul-01	21.93	15.94	18.96	J		20	21.05
208	27-Jul-01	22.26	15.78	19.06	J		20	21.38
209	28-Jul-01	20.28	16.58	18.57	J		20	21.31
210	29-Jul-01	18.50	14.67	16.82	J		20	20.97
211	30-Jul-01	16.73	14.51	15.28	J		20	20.34
212	31-Jul-01	14.99	13.13	14.03	J		20	19.52
213	1-Aug-01	18.01	12.04	14.71	J		20	18.96
214	2-Aug-01	20.76	14.20	17.17	J		20	18.79
215	3-Aug-01	20.60	15.78	18.27	J		20	18.55
216	4-Aug-01	19.79	16.10	18.08	J		20	18.48
217	5-Aug-01	21.76	15.46	18.46	J		20	18.95
218	6-Aug-01	22.93	16.58	19.74	J		20	19.83
219	7-Aug-01	23.61	17.69	20.69	J		20	21.07
220	8-Aug-01	23.44	18.18	20.89	J		20	21.84
221	9-Aug-01	22.43	17.05	19.93	J		20	22.08
222	10-Aug-01	22.26	16.41	19.48	J		20	22.32
223	11-Aug-01	21.60	16.25	19.16	J		20	22.58
224	12-Aug-01	22.60	15.94	19.29	J		20	22.70
225	13-Aug-01	22.60	18.01	20.55	J		20	22.65
226	14-Aug-01	22.60	17.53	20.22	J		20	22.50
227	15-Aug-01	22.26	17.05	19.88	J		20	22.34
228	16-Aug-01	22.26	16.41	19.55	J		20	22.31
229	17-Aug-01	21.93	16.10	19.39	J		20	22.26
230	18-Aug-01	21.93	17.05	19.81	J		20	22.31
231	19-Aug-01	20.93	15.78	18.66	J		20	22.07
232	20-Aug-01	20.44	14.51	17.70	J		20	21.76
233	21-Aug-01	20.28	14.51	17.60	J		20	21.43
234	22-Aug-01	19.47	14.67	17.53	J		20	21.03
235	23-Aug-01	19.79	14.83	17.51	J		20	20.68
236	24-Aug-01	20.44	16.10	18.33	J		20	20.47
237	25-Aug-01	20.28	14.20	17.50	J		20	20.23
238	26-Aug-01	20.60	14.51	17.90	J		20	20.19
239	27-Aug-01	21.10	15.46	18.49	J		20	20.28
240	28-Aug-01	20.93	15.78	18.63	J		20	20.37
241	29-Aug-01	20.60	14.67	17.86	J		20	20.53
242	30-Aug-01	20.09	14.50	17.71	J		20	20.58
243	31-Aug-01	20.09	15.13	17.86	J		20	20.53
244	1-Sep-01	19.93	14.97	17.63		S	20	20.48
245	2-Sep-01	19.93	14.65	17.56		S	20	20.38
246	3-Sep-01	20.25	14.97	17.87		S	20	20.26

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt
Calibration Factor : 0.08

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Bear Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 760 M

Waterbody ID Number: 4

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
247	4-Sep-01	19.12	14.97	17.50	S	20	20.00
248	5-Sep-01	18.64	15.29	17.05	S	20	19.72
249	6-Sep-01	17.03	13.57	15.42	S	20	19.28
250	7-Sep-01	14.97	12.65	13.53	S	20	18.55
251	8-Sep-01	14.65	9.55	12.31	S	20	17.80
252	9-Sep-01	15.29	9.70	12.76	S	20	17.14
253	10-Sep-01	16.24	10.64	13.62	S	20	16.56
254	11-Sep-01	16.71	11.56	14.52	S	20	16.22
255	12-Sep-01	17.19	12.34	14.95	S	20	16.01
256	13-Sep-01	17.83	13.73	15.90	S	20	16.13
257	14-Sep-01	19.44	14.97	17.18	S	20	16.76
258	15-Sep-01	18.31	13.73	16.48	S	20	17.29
259	16-Sep-01	17.99	13.26	15.96	S	20	17.67
260	17-Sep-01	17.51	14.19	16.14	S	20	17.85
261	18-Sep-01	16.87	13.11	15.30	S	20	17.88
262	19-Sep-01	15.60	11.71	14.07	S	20	17.65
263	20-Sep-01	14.50	10.17	12.79	S	20	17.17
264	21-Sep-01	14.50	10.01	12.55	S	20	16.47
265	22-Sep-01	14.19	9.86	12.39	S	20	15.88
266	23-Sep-01	14.97	10.33	12.93	S	20	15.45
267	24-Sep-01	15.45	10.94	13.44	S	20	15.15
268	25-Sep-01	14.34	10.94	13.18	S	20	14.79
269	26-Sep-01	14.97	12.18	13.73	S	20	14.70
270	27-Sep-01	14.81	11.40	13.46	S	20	14.75
271	28-Sep-01	14.34	12.18	13.52	S	20	14.72
272	29-Sep-01	14.81	11.40	13.19	S	20	14.81
273	30-Sep-01	13.88	9.70	12.20	S	20	14.66
274	1-Oct-01	13.42	9.39	11.89	S	20	14.37
275	2-Oct-01	12.49	9.39	11.40	S	20	14.10
276	3-Oct-01	11.87	8.47	10.55	S	20	13.66
277	4-Oct-01	10.79	7.39	9.51	S	20	13.09
278	5-Oct-01	9.39	5.84	8.02		20	12.38
279	6-Oct-01	8.93	5.06	7.38		20	11.54
280	7-Oct-01	8.63	6.00	7.71		20	10.79
281	8-Oct-01	9.70	8.16	8.94		20	10.26
282	9-Oct-01	9.09	7.70	8.34		20	9.77
283	10-Oct-01	9.24	6.46	7.88		20	9.40
284	11-Oct-01	8.93	7.39	8.08		20	9.13
285	12-Oct-01	7.39	6.46	6.87		20	8.84
286	13-Oct-01	8.01	6.15	6.94		20	8.71
287	14-Oct-01	8.16	6.93	7.46		20	8.65
288	15-Oct-01	8.47	6.00	7.13		20	8.47
289	16-Oct-01	8.01	5.06	6.53		20	8.32
290	17-Oct-01	8.32	6.46	7.30		20	8.18
291	18-Oct-01	6.93	5.22	6.09		20	7.90
292	19-Oct-01	7.55	5.84	6.56		20	7.92
293	20-Oct-01	8.93	7.09	7.79		20	8.05
294	21-Oct-01	7.09	5.53	6.40		20	7.90
295	22-Oct-01	6.93	6.15	6.54		20	7.68
296	23-Oct-01	6.62	5.69	6.12		20	7.48

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt
Calibration Factor : 0.08

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Bear Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 760 M

Waterbody ID Number: 4

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
297	24-Oct-01	5.84	4.75	5.31		20	7.13
298	25-Oct-01	4.91	3.82	4.40		20	6.84
299	26-Oct-01	4.44	2.40	3.48		20	6.39
300	27-Oct-01	4.29	2.09	3.25		20	5.73
301	28-Oct-01	5.69	4.29	5.00		21	5.53
302	29-Oct-01	6.46	5.69	6.08		20	5.46
303	30-Oct-01	7.09	6.46	6.75		20	5.53
304	31-Oct-01	7.55	6.78	7.11		20	5.78
305	1-Nov-01	7.09	6.31	6.75		20	6.09
306	2-Nov-01	7.09	6.31	6.65		20	6.47
307	3-Nov-01	6.78	5.22	6.06		20	6.82
308	4-Nov-01	5.06	3.66	4.35		20	6.73
309	5-Nov-01	4.75	2.56	3.64		20	6.49
310	6-Nov-01	5.38	3.98	4.63		20	6.24
311	7-Nov-01	5.06	3.35	4.50		20	5.89
312	8-Nov-01	2.88	1.30	2.01		20	5.29
313	9-Nov-01	1.61	0.02	0.81		20	4.50
314	10-Nov-01	1.14	-0.14	0.32		20	3.70
315	11-Nov-01	1.14	-0.14	0.33		20	3.14
316	12-Nov-01	2.24	0.34	1.20		20	2.78
317	13-Nov-01	2.72	1.14	1.91		20	2.40
318	14-Nov-01	3.66	2.40	2.98		20	2.20
319	15-Nov-01	4.13	2.72	3.34		20	2.38
320	16-Nov-01	4.29	2.72	3.48		20	2.76
321	17-Nov-01	4.44	3.66	4.05		20	3.23
322	18-Nov-01	5.38	3.98	4.57		20	3.84
323	19-Nov-01	3.82	2.72	3.30		20	4.06
324	20-Nov-01	4.44	3.04	3.67		20	4.31
325	21-Nov-01	5.22	4.13	4.55		20	4.53
326	22-Nov-01	4.91	4.13	4.53		20	4.64
327	23-Nov-01	4.91	4.13	4.51		20	4.73
328	24-Nov-01	3.82	2.56	3.11		20	4.64
329	25-Nov-01	2.40	1.77	2.17		20	4.22
330	26-Nov-01	2.72	1.61	2.13		20	4.06
331	27-Nov-01	2.09	0.98	1.63		20	3.72
332	28-Nov-01	0.66	-0.14	0.00		20	3.07
333	29-Nov-01	0.02	-0.14	-0.11		20	2.37
334	30-Nov-01	0.98	-0.14	0.37		20	1.81
335	1-Dec-01	0.66	0.18	0.41		20	1.36
336	2-Dec-01	0.66	-0.14	0.32		20	1.11
337	3-Dec-01	1.30	0.02	0.64		20	0.91
338	4-Dec-01	0.82	-0.14	0.11		20	0.73
339	5-Dec-01	0.02	-0.14	-0.08		20	0.64
340	6-Dec-01	-0.08	-0.14	-0.14		20	0.62
341	7-Dec-01	0.50	-0.14	0.08		20	0.55
342	8-Dec-01	0.18	-0.14	-0.06		20	0.49
343	9-Dec-01	0.02	-0.14	-0.13		20	0.39
344	10-Dec-01	0.18	-0.14	0.04		20	0.23
345	11-Dec-01	0.02	-0.14	-0.05		20	0.12
346	12-Dec-01	-0.08	-0.14	-0.14		20	0.11
347	13-Dec-01	-0.08	-0.14	-0.14		20	0.11

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt

Calibration Factor : 0.08

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Bear Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 760 M

Waterbody ID Number: 4

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
348	14-Dec-01	0.02	-0.14	-0.12		20	0.04
349	15-Dec-01	-0.08	-0.14	-0.14		20	0.00
350	16-Dec-01	-0.08	-0.14	-0.14		20	-0.01
351	17-Dec-01	0.02	-0.14	-0.12		20	-0.04
352	18-Dec-01	0.02	-0.14	-0.06		20	-0.04
353	19-Dec-01	-0.08	-0.14	-0.14		20	-0.04
354	20-Dec-01	-0.08	-0.14	-0.14		20	-0.04
355	21-Dec-01	-0.08	-0.14	-0.14		20	-0.05
356	22-Dec-01	0.02	-0.14	-0.07		20	-0.04
357	23-Dec-01	0.02	-0.14	-0.08		20	-0.02
358	24-Dec-01	0.02	-0.14	-0.08		20	-0.02
359	25-Dec-01	0.02	-0.14	0.01		20	-0.02
360	26-Dec-01	0.02	-0.14	0.01		20	-0.01
361	27-Dec-01	0.02	-0.14	-0.06		20	0.01
362	28-Dec-01	-0.08	-0.14	-0.14		20	0.01
363	29-Dec-01	-0.08	-0.14	-0.14		20	-0.01
364	30-Dec-01	-0.08	-0.14	-0.14		20	-0.02
365	31-Dec-01	-0.08	-0.14	-0.14		20	-0.04

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt

Calibration Factor : 0.08

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Moose Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 678 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S-spawn	Nbr of Msrmts per day	7-Day Average of High
1	1-Jan-01	0.31	0.00	0.15		20	
2	2-Jan-01	0.15	0.00	0.09		20	
3	3-Jan-01	0.15	0.00	0.07		20	
4	4-Jan-01	0.31	0.00	0.11		20	
5	5-Jan-01	0.31	0.15	0.18		20	
6	6-Jan-01	0.15	0.00	0.12		20	
7	7-Jan-01	0.15	0.00	0.01		20	0.22
8	8-Jan-01	0.15	0.00	0.11		20	0.20
9	9-Jan-01	0.03	0.00	0.00		20	0.18
10	10-Jan-01	0.15	0.00	0.08		20	0.18
11	11-Jan-01	0.15	0.00	0.05		20	0.16
12	12-Jan-01	0.15	0.00	0.11		20	0.13
13	13-Jan-01	0.15	0.15	0.15		20	0.13
14	14-Jan-01	0.31	0.00	0.15		20	0.16
15	15-Jan-01	0.15	0.15	0.15		20	0.16
16	16-Jan-01	0.31	0.00	0.12		20	0.20
17	17-Jan-01	0.15	0.00	0.05		20	0.20
18	18-Jan-01	0.15	0.00	0.08		20	0.20
19	19-Jan-01	0.15	0.00	0.09		20	0.20
20	20-Jan-01	0.15	0.00	0.11		20	0.20
21	21-Jan-01	0.31	0.00	0.13		20	0.20
22	22-Jan-01	0.31	0.15	0.19		20	0.22
23	23-Jan-01	0.31	0.00	0.16		20	0.22
24	24-Jan-01	0.15	0.00	0.09		20	0.22
25	25-Jan-01	0.31	0.15	0.20		20	0.24
26	26-Jan-01	0.31	0.00	0.14		20	0.26
27	27-Jan-01	0.31	0.00	0.14		20	0.29
28	28-Jan-01	0.03	0.00	0.00		20	0.25
29	29-Jan-01	0.15	0.00	0.06		20	0.22
30	30-Jan-01	0.03	0.00	0.00		20	0.18
31	31-Jan-01	0.15	0.00	0.04		20	0.18
32	1-Feb-01	0.31	0.15	0.17		20	0.18
33	2-Feb-01	0.15	0.00	0.13		20	0.16
34	3-Feb-01	0.31	0.15	0.20		20	0.16
35	4-Feb-01	0.31	0.00	0.17		20	0.20
36	5-Feb-01	0.47	0.00	0.21		20	0.25
37	6-Feb-01	0.47	0.15	0.26		20	0.31
38	7-Feb-01	0.31	0.00	0.12		20	0.33
39	8-Feb-01	0.15	0.00	0.04		20	0.31
40	9-Feb-01	0.15	0.00	0.06		20	0.31
41	10-Feb-01	0.15	0.00	0.04		20	0.29
42	11-Feb-01	0.15	0.00	0.06		20	0.26
43	12-Feb-01	0.15	0.00	0.04		20	0.22
44	13-Feb-01	0.47	0.00	0.20		20	0.22
45	14-Feb-01	0.31	0.00	0.13		20	0.22
46	15-Feb-01	0.31	0.00	0.17		20	0.24
47	16-Feb-01	0.64	0.15	0.33		20	0.31

Import File : ... y\Selway 2001\Selway abv Moose Cr 2001.txt

Calibration Factor : -0.03

Idaho Cold Water Aquatic Life Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
22 °C Instantaneous	1	1%	
19 °C Average	20	22%	
Days Evaluated & Date Range	92	22-Jun	21-Sep

Idaho Salmonid Spawning Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Instantaneous Spring	26	28%	
9 °C Average Spring	45	49%	
Spring Days Eval'd w/in Dates	92	15-Apr	15-Jul
13 °C Instantaneous Fall	48	52%	
9 °C Average Fall	53	57%	
Fall Days Eval'd w/in Dates	93	15-Aug	15-Nov
13 °C Instantaneous Total *	74	40%	
9 °C Average Total *	98	53%	
Tot Days Eval'd w/in Both Dates *	185		
* If spring & fall dates overlap double counting may occur.			

Idaho Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Juvnl Rearing MWMT (J)	72	78%	
Juvenile Days Eval'd w/in Dates	92	1-Jun	31-Aug
9 °C Spawning Daily Ave (S)	36	59%	
Spawning Days Eval'd w/in Dates	61	1-Sep	31-Oct

NOTES

Comments: Combined data from two deployments. Stream is a priori natural. Monitored as state Outstanding Resource Water nominee. Exceeds Idaho's cold water aquatic life daily maximum criterion less than 10% of the critical summer period.

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Moose Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 678 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
48	17-Feb-01	0.80	0.31	0.46		20	0.40
49	18-Feb-01	0.80	0.31	0.49		20	0.50
50	19-Feb-01	0.80	0.15	0.42		20	0.59
51	20-Feb-01	0.96	0.15	0.37		20	0.66
52	21-Feb-01	0.96	0.31	0.54		20	0.75
53	22-Feb-01	1.12	0.47	0.69		20	0.87
54	23-Feb-01	1.28	0.64	0.91		20	0.96
55	24-Feb-01	1.60	0.80	1.15		20	1.07
56	25-Feb-01	1.28	0.64	1.02		20	1.14
57	26-Feb-01	1.44	0.64	1.03		20	1.23
58	27-Feb-01	1.28	0.64	0.89		20	1.28
59	28-Feb-01	0.64	0.15	0.27		20	1.23
60	1-Mar-01	0.64	0.00	0.27		20	1.17
61	2-Mar-01	1.12	0.31	0.64		20	1.14
62	3-Mar-01	1.44	0.64	1.02		20	1.12
63	4-Mar-01	2.07	1.28	1.62		20	1.23
64	5-Mar-01	2.39	1.60	1.97		20	1.37
65	6-Mar-01	2.55	1.76	2.09		20	1.55
66	7-Mar-01	2.39	1.76	1.96		20	1.80
67	8-Mar-01	2.39	1.60	1.91		20	2.05
68	9-Mar-01	2.86	2.23	2.49		20	2.30
69	10-Mar-01	2.86	1.91	2.41		20	2.50
70	11-Mar-01	3.02	2.55	2.72		20	2.64
71	12-Mar-01	3.02	2.55	2.79		20	2.73
72	13-Mar-01	3.65	3.18	3.37		20	2.88
73	14-Mar-01	3.96	3.34	3.67		20	3.11
74	15-Mar-01	3.34	2.71	3.09		20	3.24
75	16-Mar-01	3.81	3.18	3.48		20	3.38
76	17-Mar-01	3.49	2.86	3.20		20	3.47
77	18-Mar-01	4.59	3.49	4.07		20	3.69
78	19-Mar-01	4.75	4.43	4.61		20	3.94
79	20-Mar-01	4.90	3.81	4.31		20	4.12
80	21-Mar-01	4.90	3.02	3.90		20	4.25
81	22-Mar-01	4.59	2.71	3.68		20	4.43
82	23-Mar-01	5.37	3.02	4.02		20	4.66
83	24-Mar-01	5.84	4.12	4.96		20	4.99
84	25-Mar-01	5.68	3.65	4.21		20	5.15
85	26-Mar-01	4.27	3.49	3.88		20	5.08
86	27-Mar-01	5.37	3.34	4.17		20	5.15
87	28-Mar-01	5.52	4.27	4.89		20	5.23
88	29-Mar-01	6.15	4.59	5.32		20	5.46
89	30-Mar-01	6.15	5.06	5.43		20	5.57
90	31-Mar-01	5.21	3.81	4.24		20	5.48
91	1-Apr-01	6.30	3.96	4.75		19	5.57
92	2-Apr-01	6.15	4.59	5.13		20	5.84
93	3-Apr-01	5.68	3.34	4.30		20	5.88
94	4-Apr-01	5.52	4.12	4.75		20	5.88
95	5-Apr-01	5.52	3.34	4.49		20	5.79
96	6-Apr-01	5.68	3.96	4.69		20	5.72
97	7-Apr-01	5.37	4.43	4.92		20	5.75

Import File : ... y\Selway 2001\Selway abv Moose Cr 2001.txt

Calibration Factor : -0.03

STATISTICS	
Maximum Daily Maximum (MDM)	22.1 °C
Maximum 7-Day Maximum (MWM)	21.3 °C
Maximum Daily Average (MDA)	21.3 °C
Maximum 7-Day Average (MWA)	20.4 °C
Mean Daily Maximum	8.4 °C
Mean Daily Average	7.7 °C
Mean Daily Minimum	7.1 °C
Minimum 7-Day Minimum	0.0 °C
Minimum Daily Minimum	0.0 °C
Mean of all Data	7.7 °C

EPA Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
10 °C 7-Day Avg of Daily Max	119	98%	
Nmbr of 7-Day Avg's w/in Dates	122	1-Jun	30-Sep

Seasonal Cold Water Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
26 °C Instantaneous	0	0%	
23 °C Average	0	0%	
Days Evaluated and Date Range	92	22-Jun	21-Sep

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Moose Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 678 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
98	8-Apr-01	5.21	3.81	4.37		20	5.59
99	9-Apr-01	4.75	3.65	4.20		20	5.39
100	10-Apr-01	4.90	3.81	4.45		20	5.28
101	11-Apr-01	5.21	4.12	4.74		20	5.23
102	12-Apr-01	5.21	4.43	4.84		20	5.19
103	13-Apr-01	5.37	4.27	4.86		20	5.15
104	14-Apr-01	5.37	3.96	4.80		20	5.15
105	15-Apr-01	6.30	4.12	5.21		20	5.30
106	16-Apr-01	6.76	5.06	6.08		20	5.59
107	17-Apr-01	8.16	5.99	6.98		20	6.05
108	18-Apr-01	8.31	7.07	7.65		20	6.50
109	19-Apr-01	7.85	6.30	7.02		20	6.87
110	20-Apr-01	6.92	5.06	5.68		20	7.10
111	21-Apr-01	6.61	4.90	5.66		20	7.27
112	22-Apr-01	7.07	5.06	5.90		20	7.38
113	23-Apr-01	7.69	5.99	6.67		20	7.52
114	24-Apr-01	9.70	6.76	7.88		20	7.74
115	25-Apr-01	9.54	6.76	8.26		20	7.91
116	26-Apr-01	9.24	6.45	7.77		20	8.11
117	27-Apr-01	8.16	5.84	6.86		20	8.29
118	28-Apr-01	7.07	4.90	5.84		20	8.35
119	29-Apr-01	6.15	4.59	5.39		20	8.22
120	30-Apr-01	5.99	5.37	5.63		20	7.98
121	1-May-01	5.68	4.43	5.00		20	7.40
122	2-May-01	5.84	3.81	4.71		20	6.88
123	3-May-01	6.92	3.96	5.26		20	6.54
124	4-May-01	8.31	5.06	6.46		20	6.57
125	5-May-01	8.16	6.61	7.15		20	6.72
126	6-May-01	7.22	4.27	5.80		20	6.87
127	7-May-01	8.16	4.90	6.36		20	7.18
128	8-May-01	8.46	5.99	7.29		20	7.58
129	9-May-01	8.31	6.30	7.41		20	7.93
130	10-May-01	8.62	5.99	7.31		20	8.18
131	11-May-01	8.46	5.68	7.13		20	8.20
132	12-May-01	8.62	5.99	7.36		20	8.26
133	13-May-01	8.62	6.45	7.43		20	8.46
134	14-May-01	7.69	5.99	6.82		20	8.40
135	15-May-01	7.38	5.99	6.61		20	8.24
136	16-May-01	6.92	6.30	6.62		20	8.04
137	17-May-01	7.38	4.90	6.03		20	7.87
138	18-May-01	7.54	6.61	7.05		20	7.74
139	19-May-01	8.62	5.84	7.04		20	7.74
140	20-May-01	8.62	7.07	7.87		20	7.74
141	21-May-01	8.46	5.52	6.94		20	7.85
142	22-May-01	10.01	6.76	8.11		20	8.22
143	23-May-01	10.47	7.38	8.93		20	8.73
144	24-May-01	10.32	7.54	9.09		20	9.15
145	25-May-01	10.94	8.00	9.40		20	9.63
146	26-May-01	10.63	7.85	9.36		20	9.92
147	27-May-01	10.47	8.46	9.55		20	10.19
148	28-May-01	11.09	8.31	9.71		20	10.56

Import File : ... y\Selway 2001\Selway abv Moose Cr 2001.txt

Calibration Factor : -0.03

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Moose Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 678 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
149	29-May-01	10.94	8.77	9.73		20	10.69
150	30-May-01	9.54	6.76	8.18		20	10.56
151	31-May-01	12.02	8.92	10.04		20	10.80
152	1-Jun-01	12.02	9.54	10.81		20	10.96
153	2-Jun-01	11.87	10.01	10.77		20	11.14
154	3-Jun-01	10.01	8.16	8.97		20	11.07
155	4-Jun-01	7.85	5.52	6.36		20	10.61
156	5-Jun-01	7.54	5.84	6.39		20	10.12
157	6-Jun-01	9.70	7.22	8.04		20	10.14
158	7-Jun-01	9.54	7.85	8.43		20	9.79
159	8-Jun-01	11.09	8.00	9.19		20	9.66
160	9-Jun-01	12.33	10.32	11.19		20	9.72
161	10-Jun-01	12.02	10.32	10.98		20	10.01
162	11-Jun-01	11.40	9.85	10.62		20	10.52
163	12-Jun-01	10.94	8.31	9.46		20	11.00
164	13-Jun-01	8.16	6.45	6.99		20	10.78
165	14-Jun-01	9.24	6.92	7.77		20	10.74
166	15-Jun-01	11.56	8.31	9.57		20	10.81
167	16-Jun-01	12.49	8.92	10.61		20	10.83
168	17-Jun-01	12.80	10.63	11.78		20	10.94
169	18-Jun-01	12.80	10.16	11.51		20	11.14
170	19-Jun-01	12.95	9.70	11.34		20	11.43
171	20-Jun-01	14.03	10.47	12.14		20	12.27
172	21-Jun-01	15.60	11.87	13.55	J	20	13.18
173	22-Jun-01	16.71	13.26	14.89	J	20	13.91
174	23-Jun-01	16.87	14.19	15.62	J	20	14.54
175	24-Jun-01	16.55	14.34	15.40	J	20	15.07
176	25-Jun-01	15.60	13.11	14.42	J	20	15.47
177	26-Jun-01	16.71	13.87	15.02	J	20	16.01
178	27-Jun-01	16.55	14.65	15.62	J	20	16.37
179	28-Jun-01	17.35	14.81	15.90	J	20	16.62
180	29-Jun-01	18.15	14.97	16.42	J	20	16.83
181	30-Jun-01	18.15	15.92	17.00	J	20	17.01
182	1-Jul-01	19.27	16.24	17.54	J	20	17.40
183	2-Jul-01	19.60	16.87	18.22	J	20	17.97
184	3-Jul-01	20.09	17.19	18.58	J	20	18.45
185	4-Jul-01	20.09	17.82	18.79	J	20	18.96
186	5-Jul-01	19.11	17.51	18.08	J	20	19.21
187	6-Jul-01	18.63	16.07	17.09	J	20	19.28
188	7-Jul-01	18.79	16.24	17.59	J	20	19.37
189	8-Jul-01	19.27	17.03	18.12	J	20	19.37
190	9-Jul-01	19.44	17.82	18.67	J	20	19.35
191	10-Jul-01	20.57	18.31	19.28	J	20	19.41
192	11-Jul-01	20.74	18.46	19.51	J	20	19.51
193	12-Jul-01	19.27	18.15	18.86	J	20	19.53
194	13-Jul-01	19.11	17.51	18.20	J	20	19.60
195	14-Jul-01	19.11	16.71	17.84	J	20	19.64
196	15-Jul-01	19.60	18.31	18.91	J	20	19.69
197	16-Jul-01	18.15	15.92	16.76	J	20	19.51

Import File : ... y\Selway 2001\Selway abv Moose Cr 2001.txt

Calibration Factor : -0.03

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Moose Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 678 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
198	17-Jul-01	15.92	14.50	15.31	J	20	18.84
199	18-Jul-01	16.39	14.97	15.75	J	20	18.22
200	19-Jul-01	17.82	15.76	16.63	J	20	18.01
201	20-Jul-01	18.31	17.35	17.86	J	20	17.90
202	21-Jul-01	18.79	17.19	18.08	J	20	17.85
203	22-Jul-01	19.44	17.82	18.69	J	20	17.83
204	23-Jul-01	19.44	17.99	18.77	J	20	18.02
205	24-Jul-01	19.60	18.15	18.94	J	20	18.54
206	25-Jul-01	19.92	18.46	19.14	J	20	19.05
207	26-Jul-01	19.92	18.63	19.36	J	20	19.35
208	27-Jul-01	20.09	18.63	19.36	J	20	19.60
209	28-Jul-01	19.76	18.79	19.36	J	20	19.74
210	29-Jul-01	18.79	16.87	17.83	J	20	19.65
211	30-Jul-01	16.71	15.76	16.38	J	20	19.26
212	31-Jul-01	15.60	14.50	15.02	J	20	18.68
213	1-Aug-01	15.92	13.57	14.60	J	20	18.11
214	2-Aug-01	18.15	16.07	16.95	J	20	17.86
215	3-Aug-01	19.27	17.99	18.61	J	20	17.74
216	4-Aug-01	19.11	18.31	18.63	J	20	17.65
217	5-Aug-01	19.44	17.51	18.30	J	20	17.74
218	6-Aug-01	20.74	18.95	19.68	J	20	18.32
219	7-Aug-01	21.72	20.25	20.79	J	20	19.19
220	8-Aug-01	22.06	20.74	21.26	J	20	20.07
221	9-Aug-01	21.39	20.09	20.71	J	20	20.53
222	10-Aug-01	20.90	19.44	20.08	J	20	20.77
223	11-Aug-01	20.57	19.11	19.77	J	20	20.97
224	12-Aug-01	20.74	18.95	19.74	J	20	21.16
225	13-Aug-01	21.89	19.92	20.75	J	20	21.32
226	14-Aug-01	21.56	20.09	20.76	J	20	21.30
227	15-Aug-01	21.39	19.76	20.53	J	20	21.21
228	16-Aug-01	21.06	19.44	20.20	J	20	21.16
229	17-Aug-01	20.74	18.79	19.78	J	20	21.14
230	18-Aug-01	20.74	19.11	19.91	J	20	21.16
231	19-Aug-01	20.09	18.46	19.24	J	20	21.07
232	20-Aug-01	19.11	17.19	18.22	J	20	20.67
233	21-Aug-01	18.95	17.03	17.97	J	20	20.30
234	22-Aug-01	18.63	17.03	17.90	J	20	19.90
235	23-Aug-01	18.63	16.87	17.79	J	20	19.56
236	24-Aug-01	19.27	17.19	18.06	J	20	19.35
237	25-Aug-01	18.95	16.87	17.92	J	20	19.09
238	26-Aug-01	19.27	16.71	17.95	J	20	18.97
239	27-Aug-01	19.76	17.19	18.45	J	20	19.07
240	28-Aug-01	19.76	17.66	18.77	J	20	19.18
241	29-Aug-01	19.27	17.03	18.20	J	20	19.27
242	30-Aug-01	19.11	16.71	17.97	J	20	19.34
243	31-Aug-01	18.95	16.87	17.96	J	20	19.30
244	1-Sep-01	18.79	16.87	17.88		S	19.27
245	2-Sep-01	19.58	16.71	18.15		S	19.32
246	3-Sep-01	19.58	16.68	18.15		S	19.29

Import File : ... y\Selway 2001\Selway abv Moose Cr 2001.txt

Calibration Factor : -0.03

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Moose Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 678 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
247	4-Sep-01	19.41	16.84	18.17	S	20	19.24
248	5-Sep-01	18.44	16.84	17.51	S	20	19.12
249	6-Sep-01	17.00	15.73	16.36	S	20	18.82
250	7-Sep-01	15.89	13.84	14.96	S	20	18.38
251	8-Sep-01	14.00	12.30	13.20	S	20	17.70
252	9-Sep-01	14.46	11.99	13.10	S	20	16.97
253	10-Sep-01	15.26	12.45	13.80	S	20	16.35
254	11-Sep-01	16.05	13.38	14.65	S	20	15.87
255	12-Sep-01	16.52	14.00	15.22	S	20	15.60
256	13-Sep-01	17.47	15.10	16.25	S	20	15.66
257	14-Sep-01	18.60	16.21	17.29	S	20	16.05
258	15-Sep-01	18.12	16.21	17.27	S	20	16.64
259	16-Sep-01	17.47	15.26	16.47	S	20	17.07
260	17-Sep-01	17.47	15.57	16.47	S	20	17.39
261	18-Sep-01	17.00	15.41	16.25	S	20	17.52
262	19-Sep-01	15.89	14.15	14.99	S	20	17.43
263	20-Sep-01	14.46	12.61	13.60	S	20	17.00
264	21-Sep-01	14.00	11.83	13.04	S	20	16.34
265	22-Sep-01	13.84	11.67	12.86	S	20	15.73
266	23-Sep-01	14.31	11.83	13.14	S	20	15.28
267	24-Sep-01	14.62	12.30	13.51	S	20	14.87
268	25-Sep-01	14.62	12.61	13.78	S	20	14.53
269	26-Sep-01	14.78	13.23	14.03	S	20	14.38
270	27-Sep-01	14.31	13.07	13.80	S	20	14.35
271	28-Sep-01	14.62	13.38	13.98	S	20	14.44
272	29-Sep-01	14.00	12.61	13.40	S	20	14.47
273	30-Sep-01	13.54	11.83	12.78	S	20	14.36
274	1-Oct-01	13.07	11.21	12.26	S	20	14.13
275	2-Oct-01	12.61	11.06	11.96	S	20	13.85
276	3-Oct-01	11.83	10.28	11.23	S	20	13.43
277	4-Oct-01	10.90	9.19	10.16	S	20	12.94
278	5-Oct-01	9.66	7.96	8.83		20	12.23
279	6-Oct-01	8.57	6.87	7.87		20	11.45
280	7-Oct-01	9.04	7.34	8.29		20	10.81
281	8-Oct-01	9.66	8.57	9.10	S	20	10.32
282	9-Oct-01	9.35	8.88	9.16	S	20	9.86
283	10-Oct-01	9.04	7.96	8.54		20	9.46
284	11-Oct-01	9.04	8.42	8.71		20	9.19
285	12-Oct-01	8.42	7.34	7.93		20	9.02
286	13-Oct-01	8.11	7.19	7.57		20	8.95
287	14-Oct-01	8.26	7.80	8.03		20	8.84
288	15-Oct-01	8.26	7.50	7.83		20	8.64
289	16-Oct-01	7.65	7.03	7.36		20	8.40
290	17-Oct-01	8.11	7.19	7.71		20	8.26
291	18-Oct-01	7.50	6.87	7.15		20	8.04
292	19-Oct-01	7.19	6.87	7.01		20	7.87
293	20-Oct-01	8.11	7.19	7.68		20	7.87
294	21-Oct-01	8.11	6.87	7.38		20	7.85
295	22-Oct-01	7.34	7.03	7.23		20	7.72

Import File : ... y\Selway 2001\Selway abv Moose Cr 2001.txt

Calibration Factor : -0.03

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Moose Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 678 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
296	23-Oct-01	7.19	6.25	6.77		20	7.65
297	24-Oct-01	6.25	5.62	5.90		20	7.38
298	25-Oct-01	5.62	5.16	5.34		20	7.12
299	26-Oct-01	5.16	4.06	4.50		20	6.83
300	27-Oct-01	4.37	4.06	4.21		20	6.29
301	28-Oct-01	5.62	4.37	5.22		21	5.94
302	29-Oct-01	6.56	5.78	6.16		20	5.82
303	30-Oct-01	7.19	6.56	6.89		20	5.82
304	31-Oct-01	7.65	7.19	7.38		20	6.02
305	1-Nov-01	7.50	7.03	7.20		20	6.29
306	2-Nov-01	7.19	6.87	7.04		20	6.58
307	3-Nov-01	7.34	6.56	6.92		20	7.01
308	4-Nov-01	6.56	5.00	5.58		20	7.14
309	5-Nov-01	5.00	4.06	4.50		20	6.92
310	6-Nov-01	5.31	4.85	5.13		20	6.65
311	7-Nov-01	5.47	4.53	5.04		20	6.34
312	8-Nov-01	4.53	2.33	3.23		20	5.91
313	9-Nov-01	2.49	1.37	1.81		20	5.24
314	10-Nov-01	1.54	0.90	1.13		20	4.41
315	11-Nov-01	1.22	0.74	0.97		20	3.65
316	12-Nov-01	1.85	1.06	1.45		20	3.20
317	13-Nov-01	2.65	2.01	2.29		20	2.82
318	14-Nov-01	3.75	2.65	3.21		20	2.58
319	15-Nov-01	3.91	3.60	3.76		20	2.49
320	16-Nov-01	4.06	3.75	3.94		20	2.71
321	17-Nov-01	4.85	4.22	4.59		20	3.18
322	18-Nov-01	4.85	4.69	4.71		20	3.70
323	19-Nov-01	4.85	3.75	4.15		20	4.13
324	20-Nov-01	4.22	3.75	3.95		20	4.36
325	21-Nov-01	5.16	4.37	4.78		20	4.56
326	22-Nov-01	5.16	4.85	5.03		20	4.74
327	23-Nov-01	5.16	5.00	5.06		20	4.89
328	24-Nov-01	5.00	3.60	4.14		20	4.91
329	25-Nov-01	3.44	2.81	3.04		20	4.71
330	26-Nov-01	2.96	2.65	2.81		20	4.44
331	27-Nov-01	2.81	2.17	2.55		20	4.24
332	28-Nov-01	2.01	0.41	1.09		20	3.79
333	29-Nov-01	0.57	0.41	0.48		20	3.14
334	30-Nov-01	0.74	0.57	0.65		20	2.50
335	1-Dec-01	1.06	0.74	0.96		20	1.94
336	2-Dec-01	1.06	0.90	0.93		20	1.60
337	3-Dec-01	1.22	0.90	1.12		20	1.35
338	4-Dec-01	1.22	0.57	0.97		20	1.13
339	5-Dec-01	0.57	0.25	0.45		20	0.92
340	6-Dec-01	0.41	0.25	0.33		20	0.90
341	7-Dec-01	0.74	0.41	0.51		20	0.90
342	8-Dec-01	0.57	0.25	0.42		20	0.83
343	9-Dec-01	0.57	0.25	0.36		20	0.76
344	10-Dec-01	0.41	0.25	0.34		20	0.64
345	11-Dec-01	0.57	0.25	0.31		20	0.55
346	12-Dec-01	0.25	0.25	0.25		20	0.50

Import File : ... y\Selway 2001\Selway abv Moose Cr 2001.txt

Calibration Factor : -0.03

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Moose Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 678 M

Waterbody ID Number: 1

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
347	13-Dec-01	0.25	0.25	0.25		20	0.48
348	14-Dec-01	0.41	0.25	0.27		20	0.43
349	15-Dec-01	0.41	0.25	0.27		20	0.41
350	16-Dec-01	0.25	0.25	0.25		20	0.36
351	17-Dec-01	0.57	0.25	0.37		20	0.39
352	18-Dec-01	0.25	0.25	0.25		20	0.34
353	19-Dec-01	0.25	0.25	0.25		20	0.34
354	20-Dec-01	0.25	0.25	0.25		20	0.34
355	21-Dec-01	0.57	0.25	0.35		20	0.36
356	22-Dec-01	0.41	0.25	0.36		20	0.36
357	23-Dec-01	0.25	0.25	0.25		20	0.36
358	24-Dec-01	0.25	0.09	0.23		20	0.32
359	25-Dec-01	0.25	0.09	0.24		20	0.32
360	26-Dec-01	0.25	0.25	0.25		20	0.32
361	27-Dec-01	0.25	0.09	0.21		20	0.32
362	28-Dec-01	0.25	0.09	0.22		20	0.27
363	29-Dec-01	0.25	0.09	0.21		20	0.25
364	30-Dec-01	0.25	0.25	0.25		20	0.25
365	31-Dec-01	0.25	0.25	0.25		20	0.25

Import File : ... y\Selway 2001\Selway abv Moose Cr 2001.txt

Calibration Factor : -0.03

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Pinchot Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060302

HUC4 Name: Lower Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 567 M

Waterbody ID Number: 22

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt

Calibration Factor : 0.08

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S-spawn	Nbr of Msrmts per day	7-Day Average of High
1	1-Jan-01	0.96	0.65	0.80		20	
2	2-Jan-01	0.65	0.33	0.47		20	
3	3-Jan-01	0.65	0.49	0.55		20	
4	4-Jan-01	0.65	0.33	0.50		20	
5	5-Jan-01	0.81	0.49	0.70		20	
6	6-Jan-01	0.81	0.49	0.64		20	
7	7-Jan-01	0.49	0.16	0.20		20	0.72
8	8-Jan-01	0.33	0.16	0.22		20	0.63
9	9-Jan-01	0.16	0.16	0.16		20	0.56
10	10-Jan-01	0.16	0.16	0.16		20	0.49
11	11-Jan-01	0.33	0.16	0.22		20	0.44
12	12-Jan-01	0.49	0.33	0.35		20	0.40
13	13-Jan-01	0.65	0.33	0.43		20	0.37
14	14-Jan-01	0.65	0.33	0.49		20	0.40
15	15-Jan-01	0.65	0.33	0.46		20	0.44
16	16-Jan-01	0.65	0.33	0.43		20	0.51
17	17-Jan-01	0.49	0.16	0.35		20	0.56
18	18-Jan-01	0.16	0.16	0.16		20	0.53
19	19-Jan-01	0.49	0.16	0.31		20	0.53
20	20-Jan-01	0.49	0.33	0.48		20	0.51
21	21-Jan-01	0.81	0.33	0.55		20	0.53
22	22-Jan-01	0.96	0.65	0.80		20	0.58
23	23-Jan-01	0.81	0.65	0.79		20	0.60
24	24-Jan-01	0.81	0.33	0.52		20	0.65
25	25-Jan-01	0.81	0.49	0.62		20	0.74
26	26-Jan-01	0.65	0.49	0.56		20	0.76
27	27-Jan-01	0.81	0.33	0.54		20	0.81
28	28-Jan-01	0.33	0.16	0.17		20	0.74
29	29-Jan-01	0.16	0.00	0.02		20	0.63
30	30-Jan-01	0.00	0.00	0.00		20	0.51
31	31-Jan-01	0.16	0.00	0.02		20	0.42
32	1-Feb-01	0.49	0.16	0.24		20	0.37
33	2-Feb-01	0.65	0.16	0.41		20	0.37
34	3-Feb-01	0.96	0.33	0.56		20	0.39
35	4-Feb-01	0.81	0.49	0.68		20	0.46
36	5-Feb-01	0.96	0.16	0.51		20	0.58
37	6-Feb-01	1.29	0.81	1.03		20	0.76
38	7-Feb-01	1.13	0.33	0.90		20	0.90
39	8-Feb-01	0.33	0.16	0.21		20	0.88
40	9-Feb-01	0.33	0.16	0.21		20	0.83
41	10-Feb-01	0.49	0.16	0.32		20	0.76
42	11-Feb-01	0.65	0.33	0.42		20	0.74
43	12-Feb-01	0.49	0.16	0.31		20	0.67
44	13-Feb-01	1.13	0.33	0.63		20	0.65
45	14-Feb-01	0.96	0.49	0.67		20	0.63
46	15-Feb-01	0.65	0.33	0.53		20	0.67
47	16-Feb-01	1.44	0.49	0.85		20	0.83

Idaho Cold Water Aquatic Life Criteria Exceedance Summary

Criteria	Exceedance Counts		
	Nmbr	Prcnt	
22 °C Instantaneous	3	4%	
19 °C Average	23	27%	
Days Evaluated & Date Range	84	22-Jun	21-Sep

Idaho Salmonid Spawning Criteria Exceedance Summary

Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Instantaneous Spring	26	28%	
9 °C Average Spring	44	48%	
Spring Days Eval'd w/in Dates	92	15-Apr	15-Jul
13 °C Instantaneous Fall	30	35%	
9 °C Average Fall	37	44%	
Fall Days Eval'd w/in Dates	85	15-Aug	15-Nov
13 °C Instantaneous Total *	56	32%	
9 °C Average Total *	81	46%	
Tot Days Eval'd w/in Both Dates *	177		

* If spring & fall dates overlap double counting may occur.

Idaho Bull Trout Criteria Exceedance Summary

Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Juvnl Rearing MWMT (J)	0	0%	
Juvenile Days Eval'd w/in Dates	0	1-Jun	31-Aug
9 °C Spawning Daily Ave (S)	0	0%	
Spawning Days Eval'd w/in Dates	0	1-Sep	31-Oct

NOTES

Comments: Data from one deployment wrapped so that fall 2000 data follows summer 2001 data. Data gap from 9-5 thru 9-12. Stream is *a priori* natural. Monitored as state Outstanding Resource Water nominee. Temperature exceeds Idaho's cold water aquatic life daily maximum criterion less than 10% of the critical summer period.

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Pinchot Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060302

HUC4 Name: Lower Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 567 M

Waterbody ID Number: 22

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S-spawn	Nbr of Msrmts per day	7-Day Average of High
48	17-Feb-01	1.92	1.13	1.48		20	1.03
49	18-Feb-01	1.92	1.44	1.67		20	1.22
50	19-Feb-01	2.08	1.60	1.78		20	1.44
51	20-Feb-01	1.76	1.13	1.42		20	1.53
52	21-Feb-01	2.24	1.29	1.83		20	1.72
53	22-Feb-01	2.39	1.92	2.09		20	1.96
54	23-Feb-01	2.39	2.08	2.21		20	2.10
55	24-Feb-01	2.55	1.92	2.21		20	2.19
56	25-Feb-01	2.24	1.76	1.94		20	2.24
57	26-Feb-01	1.92	1.44	1.69		20	2.21
58	27-Feb-01	1.60	0.96	1.30		20	2.19
59	28-Feb-01	1.29	0.49	0.73		20	2.05
60	1-Mar-01	1.13	0.16	0.54		20	1.87
61	2-Mar-01	1.76	0.81	1.16		20	1.78
62	3-Mar-01	2.08	1.29	1.58		20	1.72
63	4-Mar-01	2.55	1.60	1.95		20	1.76
64	5-Mar-01	3.03	2.08	2.55		20	1.92
65	6-Mar-01	3.34	2.24	2.65		20	2.17
66	7-Mar-01	3.34	2.39	2.71		20	2.46
67	8-Mar-01	3.34	2.08	2.75		20	2.78
68	9-Mar-01	3.49	3.03	3.26		20	3.02
69	10-Mar-01	3.34	2.71	3.02		20	3.20
70	11-Mar-01	3.34	3.03	3.19		20	3.32
71	12-Mar-01	3.65	2.86	3.22		20	3.41
72	13-Mar-01	4.28	3.34	3.72		20	3.54
73	14-Mar-01	4.28	3.65	3.91		20	3.67
74	15-Mar-01	3.81	3.18	3.52		20	3.74
75	16-Mar-01	4.28	3.65	3.87		20	3.85
76	17-Mar-01	4.28	3.49	3.89		20	3.99
77	18-Mar-01	4.90	3.81	4.31		20	4.21
78	19-Mar-01	5.05	4.59	4.80		20	4.41
79	20-Mar-01	4.90	3.81	4.28		20	4.50
80	21-Mar-01	4.90	3.81	4.16		20	4.59
81	22-Mar-01	4.28	3.49	3.89		20	4.66
82	23-Mar-01	4.59	3.81	4.08		20	4.70
83	24-Mar-01	5.21	4.43	4.73		20	4.83
84	25-Mar-01	5.21	3.96	4.55		20	4.88
85	26-Mar-01	4.28	3.81	3.99		20	4.77
86	27-Mar-01	4.90	3.81	4.24		20	4.77
87	28-Mar-01	5.21	4.59	4.91		20	4.81
88	29-Mar-01	5.68	4.90	5.26		20	5.01
89	30-Mar-01	5.68	5.21	5.50		20	5.17
90	31-Mar-01	5.52	4.28	4.65		20	5.21
91	1-Apr-01	5.52	4.12	4.54		19	5.26
92	2-Apr-01	5.68	4.90	5.33		20	5.46
93	3-Apr-01	5.21	4.12	4.51		20	5.50
94	4-Apr-01	5.36	4.74	5.21		20	5.52
95	5-Apr-01	5.52	4.28	4.88		20	5.50
96	6-Apr-01	5.52	4.74	5.05		20	5.48
97	7-Apr-01	5.21	4.90	5.08		20	5.43

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt
Calibration Factor : 0.08

STATISTICS	
Maximum Daily Maximum (MDM)	22.1 °C
Maximum 7-Day Maximum (MWM)	21.7 °C
Maximum Daily Average (MDA)	21.2 °C
Maximum 7-Day Average (MWA)	20.6 °C
Mean Daily Maximum	7.9 °C
Mean Daily Average	7.3 °C
Mean Daily Minimum	6.8 °C
Minimum 7-Day Minimum	0.1 °C
Minimum Daily Minimum	0.0 °C
Mean of all Data	7.3 °C

EPA Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
10 °C 7-Day Avg of Daily Max	106	93%	
Nmbr of 7-Day Avg's w/in Dates	114	1-Jun	30-Sep

Seasonal Cold Water Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
26 °C Instantaneous	0	0%	
23 °C Average	0	0%	
Days Evaluated and Date Range	84	22-Jun	21-Sep

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Pinchot Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060302

HUC4 Name: Lower Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 567 M

Waterbody ID Number: 22

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
98	8-Apr-01	5.21	4.43	4.76		20	5.39
99	9-Apr-01	4.59	4.28	4.46		20	5.23
100	10-Apr-01	5.05	4.43	4.70		20	5.21
101	11-Apr-01	5.21	4.74	5.00		20	5.19
102	12-Apr-01	5.36	4.90	5.11		20	5.16
103	13-Apr-01	5.36	5.05	5.21		20	5.14
104	14-Apr-01	5.36	4.59	5.11		20	5.16
105	15-Apr-01	5.83	4.90	5.40		20	5.25
106	16-Apr-01	6.61	5.83	6.21		20	5.54
107	17-Apr-01	7.54	6.61	6.93		20	5.90
108	18-Apr-01	7.85	7.38	7.61		20	6.27
109	19-Apr-01	7.69	6.76	7.22		20	6.61
110	20-Apr-01	7.23	5.52	6.12		20	6.87
111	21-Apr-01	6.14	5.52	5.76		20	6.98
112	22-Apr-01	6.76	5.52	6.13		20	7.12
113	23-Apr-01	7.23	6.45	6.79		20	7.21
114	24-Apr-01	8.77	7.08	7.55		20	7.38
115	25-Apr-01	8.77	7.23	8.08		20	7.51
116	26-Apr-01	8.77	6.76	7.66		20	7.67
117	27-Apr-01	8.00	6.14	6.84		20	7.78
118	28-Apr-01	6.92	5.21	5.98		20	7.89
119	29-Apr-01	5.99	5.05	5.51		20	7.78
120	30-Apr-01	5.99	5.52	5.68		20	7.60
121	1-May-01	5.68	4.74	5.07		20	7.16
122	2-May-01	5.68	4.12	4.74		20	6.72
123	3-May-01	6.45	4.43	5.26		20	6.39
124	4-May-01	7.54	5.52	6.35		20	6.32
125	5-May-01	7.85	6.76	7.24		20	6.45
126	6-May-01	6.92	4.90	5.95		20	6.59
127	7-May-01	7.38	5.36	6.30		20	6.79
128	8-May-01	7.85	6.45	7.12		20	7.10
129	9-May-01	8.00	6.61	7.31		20	7.43
130	10-May-01	8.15	6.30	7.24		20	7.67
131	11-May-01	8.15	6.14	7.12		20	7.76
132	12-May-01	8.15	6.30	7.26		20	7.80
133	13-May-01	8.15	6.61	7.24		20	7.98
134	14-May-01	7.54	5.99	6.75		20	8.00
135	15-May-01	7.23	5.83	6.50		20	7.91
136	16-May-01	6.92	6.14	6.54		20	7.76
137	17-May-01	7.23	5.05	5.99		20	7.62
138	18-May-01	7.38	6.61	6.96		20	7.51
139	19-May-01	8.31	5.99	6.86		20	7.54
140	20-May-01	8.46	7.08	7.80		20	7.58
141	21-May-01	8.31	5.83	6.91		20	7.69
142	22-May-01	9.38	6.92	7.92		20	8.00
143	23-May-01	10.01	7.54	8.75		20	8.44
144	24-May-01	10.32	7.69	8.99		20	8.88
145	25-May-01	10.79	8.00	9.26		20	9.37
146	26-May-01	10.79	8.00	9.27		20	9.72
147	27-May-01	10.48	8.31	9.39		20	10.01
148	28-May-01	10.79	8.61	9.59		20	10.37

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt
Calibration Factor : 0.08

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Pinchot Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060302

HUC4 Name: Lower Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 567 M

Waterbody ID Number: 22

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
149	29-May-01	10.94	8.61	9.65		20	10.59
150	30-May-01	9.54	6.92	8.14		20	10.52
151	31-May-01	11.40	8.92	9.57		20	10.68
152	1-Jun-01	11.40	9.69	10.57		20	10.76
153	2-Jun-01	11.71	10.16	10.81		20	10.89
154	3-Jun-01	10.01	8.46	9.03		20	10.83
155	4-Jun-01	8.31	5.68	6.72		20	10.47
156	5-Jun-01	7.23	5.83	6.17		20	9.94
157	6-Jun-01	9.08	7.23	7.74		20	9.88
158	7-Jun-01	9.23	7.85	8.47		20	9.57
159	8-Jun-01	10.48	8.15	8.78		20	9.44
160	9-Jun-01	11.87	10.48	10.96		20	9.46
161	10-Jun-01	12.02	10.48	11.07		20	9.75
162	11-Jun-01	10.94	9.85	10.32		20	10.12
163	12-Jun-01	10.94	8.61	9.74		20	10.65
164	13-Jun-01	8.46	6.92	7.38		20	10.56
165	14-Jun-01	9.08	7.08	7.61		20	10.54
166	15-Jun-01	10.94	8.77	9.40		20	10.61
167	16-Jun-01	11.56	9.54	10.43		20	10.56
168	17-Jun-01	12.02	10.79	11.42		20	10.56
169	18-Jun-01	12.18	10.63	11.38		20	10.74
170	19-Jun-01	12.18	10.32	11.24		20	10.92
171	20-Jun-01	13.26	11.25	12.01		20	11.60
172	21-Jun-01	14.65	12.49	13.29		20	12.40
173	22-Jun-01	15.92	13.88	14.67		20	13.11
174	23-Jun-01	16.24	14.81	15.52		20	13.78
175	24-Jun-01	16.39	14.97	15.46		20	14.40
176	25-Jun-01	15.29	13.88	14.51		20	14.85
177	26-Jun-01	15.60	14.19	14.81		20	15.34
178	27-Jun-01	15.76	15.29	15.60		20	15.69
179	28-Jun-01	16.71	15.13	15.68		20	15.99
180	29-Jun-01	17.35	15.60	16.35		20	16.19
181	30-Jun-01	17.51	16.39	16.91		20	16.37
182	1-Jul-01	18.31	16.71	17.26		20	16.65
183	2-Jul-01	18.48	17.51	18.08		20	17.10
184	3-Jul-01	18.96	17.83	18.40		20	17.58
185	4-Jul-01	19.28	18.48	18.85		20	18.09
186	5-Jul-01	18.96	17.99	18.48		20	18.41
187	6-Jul-01	17.99	16.71	17.37		20	18.50
188	7-Jul-01	18.15	17.19	17.73		20	18.59
189	8-Jul-01	18.96	17.67	18.26		20	18.68
190	9-Jul-01	19.77	18.96	19.26		20	18.87
191	10-Jul-01	20.58	18.64	19.49		20	19.10
192	11-Jul-01	20.41	19.44	19.96		20	19.26
193	12-Jul-01	19.77	18.64	19.30		20	19.38
194	13-Jul-01	19.44	18.31	18.81		20	19.58
195	14-Jul-01	19.12	17.35	18.12		20	19.72
196	15-Jul-01	19.60	18.64	19.07		20	19.81
197	16-Jul-01	18.64	16.39	17.50		20	19.65

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt
Calibration Factor : 0.08

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Pinchot Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060302

HUC4 Name: Lower Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 567 M

Waterbody ID Number: 22

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
198	17-Jul-01	16.24	15.13	15.60		20	19.03
199	18-Jul-01	16.08	15.13	15.63		20	18.41
200	19-Jul-01	17.83	15.60	16.41		20	18.14
201	20-Jul-01	18.15	17.35	17.76		20	17.95
202	21-Jul-01	18.48	17.03	17.71		20	17.86
203	22-Jul-01	19.60	17.51	18.40		20	17.86
204	23-Jul-01	19.60	17.83	18.71		20	18.00
205	24-Jul-01	19.77	17.99	18.87		20	18.50
206	25-Jul-01	20.09	18.48	19.20		20	19.07
207	26-Jul-01	20.09	18.48	19.26		20	19.40
208	27-Jul-01	20.25	18.31	19.25		20	19.70
209	28-Jul-01	19.77	18.96	19.24		20	19.88
210	29-Jul-01	18.96	17.19	17.83		20	19.79
211	30-Jul-01	17.03	16.08	16.36		20	19.42
212	31-Jul-01	15.92	14.97	15.45		20	18.87
213	1-Aug-01	15.76	14.19	15.08		20	18.25
214	2-Aug-01	18.48	15.60	16.79		20	18.02
215	3-Aug-01	19.93	17.83	18.56		20	17.98
216	4-Aug-01	19.44	18.64	18.94		20	17.93
217	5-Aug-01	19.28	17.19	18.21		20	17.98
218	6-Aug-01	20.74	18.64	19.40		20	18.51
219	7-Aug-01	21.90	19.93	20.71		20	19.36
220	8-Aug-01	22.07	20.58	21.23		20	20.26
221	9-Aug-01	21.74	20.25	20.96		20	20.73
222	10-Aug-01	21.40	19.77	20.58		20	20.94
223	11-Aug-01	20.91	19.28	20.07		20	21.15
224	12-Aug-01	21.07	18.96	19.88		20	21.40
225	13-Aug-01	21.90	19.93	20.67		20	21.57
226	14-Aug-01	22.07	20.09	21.03		20	21.59
227	15-Aug-01	22.07	19.77	20.86		20	21.59
228	16-Aug-01	21.90	19.60	20.54		20	21.62
229	17-Aug-01	21.40	18.96	20.11		20	21.62
230	18-Aug-01	21.24	18.96	20.03		20	21.66
231	19-Aug-01	20.74	18.31	19.57		20	21.62
232	20-Aug-01	20.09	17.19	18.65		20	21.36
233	21-Aug-01	19.93	16.87	18.32		20	21.05
234	22-Aug-01	18.80	16.71	17.84		20	20.59
235	23-Aug-01	19.28	16.55	17.75		20	20.21
236	24-Aug-01	19.44	17.03	18.19		20	19.93
237	25-Aug-01	19.60	16.24	17.91		20	19.70
238	26-Aug-01	20.25	16.08	18.12		20	19.63
239	27-Aug-01	20.74	16.71	18.57		20	19.72
240	28-Aug-01	20.41	16.87	18.63		20	19.79
241	29-Aug-01	20.41	16.08	18.21		20	20.02
242	30-Aug-01	20.41	15.76	18.19		20	20.18
243	31-Aug-01	19.12	16.08	17.77		20	20.13
244	1-Sep-01	19.60	15.60	17.67		20	20.13
245	2-Sep-01	19.77	15.60	17.81		20	20.07
246	3-Sep-01	20.09	15.76	17.93		20	19.97

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt
Calibration Factor : 0.08

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Pinchot Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060302

HUC4 Name: Lower Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 567 M

Waterbody ID Number: 22

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
247	4-Sep-01	18.96	15.60	17.13		14	19.77
249	13-Sep-01	15.60	12.33	14.05		20	19.08
250	14-Sep-01	16.39	14.81	15.41		20	18.50
251	15-Sep-01	16.87	15.13	15.81		20	18.18
252	16-Sep-01	17.67	15.76	16.51		20	17.91
253	17-Sep-01	18.31	16.24	17.09		20	17.70
254	18-Sep-01	17.03	16.24	16.73		20	17.26
255	19-Sep-01	17.19	15.92	16.32		20	17.01
256	20-Sep-01	15.76	14.50	15.11		20	17.03
257	21-Sep-01	14.34	12.95	13.78		20	16.74
258	22-Sep-01	12.80	10.63	11.82		20	16.16
259	23-Sep-01	10.32	8.77	9.49		20	15.11
260	24-Sep-01	9.08	7.69	8.26		20	13.79
261	25-Sep-01	9.38	7.38	8.15		20	12.70
262	26-Sep-01	9.54	7.54	8.34		20	11.60
263	27-Sep-01	9.85	7.69	8.59		20	10.76
264	28-Sep-01	10.16	8.00	8.89		20	10.16
265	29-Sep-01	10.01	8.46	9.22		20	9.76
266	30-Sep-01	10.16	9.23	9.64		20	9.74
267	1-Oct-01	10.79	10.16	10.34		20	9.98
268	2-Oct-01	10.79	10.01	10.30		20	10.19
269	3-Oct-01	10.32	8.92	9.47		20	10.30
270	4-Oct-01	9.08	8.00	8.58		20	10.19
271	5-Oct-01	8.15	6.92	7.58		20	9.90
272	6-Oct-01	7.08	5.99	6.59		20	9.48
273	7-Oct-01	6.30	5.52	5.96		20	8.93
274	8-Oct-01	6.45	5.52	5.90		20	8.31
275	9-Oct-01	6.92	5.99	6.32		20	7.76
276	10-Oct-01	7.69	6.61	7.14		20	7.38
277	11-Oct-01	8.46	7.69	7.93		20	7.29
278	12-Oct-01	8.77	8.31	8.58		20	7.38
279	13-Oct-01	8.77	8.15	8.46		20	7.62
280	14-Oct-01	8.15	7.69	7.86		20	7.89
281	15-Oct-01	8.15	7.85	7.93		20	8.13
282	16-Oct-01	8.31	7.85	8.08		20	8.33
283	17-Oct-01	7.85	7.38	7.62		20	8.35
284	18-Oct-01	7.54	7.08	7.31		20	8.22
285	19-Oct-01	8.15	7.23	7.75		20	8.13
286	20-Oct-01	8.31	7.54	7.88		20	8.07
287	21-Oct-01	7.69	7.54	7.66		20	8.00
288	22-Oct-01	7.54	6.30	6.85		20	7.91
289	23-Oct-01	6.30	4.28	5.21		20	7.63
290	24-Oct-01	4.43	3.65	4.07		20	7.14
291	25-Oct-01	4.12	3.65	3.86		20	6.65
292	26-Oct-01	4.28	3.81	4.07		20	6.10
293	27-Oct-01	5.36	4.28	4.91		20	5.67
294	28-Oct-01	5.83	5.52	5.72		20	5.41
295	29-Oct-01	6.30	5.83	5.97		21	5.23
296	30-Oct-01	6.61	6.30	6.37		20	5.28
297	31-Oct-01	6.30	5.83	6.09		20	5.54

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt

Calibration Factor : 0.08

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Pinchot Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060302

HUC4 Name: Lower Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 567 M

Waterbody ID Number: 22

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
298	1-Nov-01	5.83	5.52	5.78		20	5.79
299	2-Nov-01	5.36	4.12	4.80		20	5.94
300	3-Nov-01	4.12	2.86	3.49		20	5.76
301	4-Nov-01	2.86	2.55	2.72		20	5.34
302	5-Nov-01	3.03	2.71	2.91		20	4.87
303	6-Nov-01	3.34	3.03	3.14		20	4.41
304	7-Nov-01	3.34	2.55	2.97		20	3.98
305	8-Nov-01	2.55	1.60	2.18		20	3.51
306	9-Nov-01	1.76	1.29	1.48		20	3.00
307	10-Nov-01	1.44	0.49	0.95		20	2.62
308	11-Nov-01	0.65	0.49	0.55		20	2.30
309	12-Nov-01	0.65	0.33	0.53		20	1.96
310	13-Nov-01	0.65	0.33	0.41		20	1.58
311	14-Nov-01	0.33	0.16	0.31		20	1.15
312	15-Nov-01	0.49	0.16	0.30		20	0.85
313	16-Nov-01	0.49	0.33	0.39		20	0.67
314	17-Nov-01	0.49	0.16	0.33		20	0.54
315	18-Nov-01	0.49	0.16	0.27		20	0.51
316	19-Nov-01	0.16	0.16	0.16		20	0.44
317	20-Nov-01	0.16	0.16	0.16		20	0.37
318	21-Nov-01	0.16	0.16	0.16		20	0.35
319	22-Nov-01	0.16	0.16	0.16		20	0.30
320	23-Nov-01	0.16	0.16	0.16		20	0.25
321	24-Nov-01	0.16	0.16	0.16		20	0.21
322	25-Nov-01	0.49	0.16	0.32		20	0.21
323	26-Nov-01	0.49	0.16	0.39		20	0.25
324	27-Nov-01	0.49	0.16	0.33		20	0.30
325	28-Nov-01	0.49	0.33	0.39		20	0.35
326	29-Nov-01	0.49	0.16	0.26		20	0.40
327	30-Nov-01	0.65	0.33	0.49		20	0.47
328	1-Dec-01	0.65	0.49	0.59		20	0.54
329	2-Dec-01	0.49	0.16	0.33		20	0.54
330	3-Dec-01	0.81	0.49	0.61		20	0.58
331	4-Dec-01	1.13	0.65	0.91		20	0.67
332	5-Dec-01	1.13	0.96	1.04		20	0.76
333	6-Dec-01	1.29	0.81	1.05		20	0.88
334	7-Dec-01	0.81	0.49	0.63		20	0.90
335	8-Dec-01	0.81	0.65	0.68		20	0.92
336	9-Dec-01	0.65	0.49	0.55		20	0.95
337	10-Dec-01	0.81	0.49	0.71		20	0.95
338	11-Dec-01	0.49	0.16	0.28		20	0.86
339	12-Dec-01	0.33	0.16	0.24		20	0.74
340	13-Dec-01	0.16	0.16	0.16		20	0.58
341	14-Dec-01	0.16	0.16	0.16		20	0.49
342	15-Dec-01	0.16	0.16	0.16		20	0.39
343	16-Dec-01	0.33	0.16	0.31		20	0.35
344	17-Dec-01	0.33	0.33	0.33		20	0.28
345	18-Dec-01	0.33	0.33	0.33		20	0.26
346	19-Dec-01	0.33	0.16	0.32		20	0.26
347	20-Dec-01	0.33	0.16	0.28		20	0.28
348	21-Dec-01	0.16	0.16	0.16		20	0.28

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt
Calibration Factor : 0.08

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Pinchot Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060302

HUC4 Name: Lower Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 567 M

Waterbody ID Number: 22

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
349	22-Dec-01	0.16	0.16	0.16		20	0.28
350	23-Dec-01	0.16	0.16	0.16		20	0.26
351	24-Dec-01	0.33	0.16	0.28		20	0.26
352	25-Dec-01	0.33	0.33	0.33		20	0.26
353	26-Dec-01	0.49	0.33	0.34		20	0.28
354	27-Dec-01	0.49	0.33	0.39		20	0.30
355	28-Dec-01	0.65	0.33	0.49		20	0.37
356	29-Dec-01	0.49	0.16	0.34		20	0.42
357	30-Dec-01	0.65	0.33	0.47		20	0.49
358	31-Dec-01	0.81	0.65	0.71		20	0.56

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt

Calibration Factor : 0.08

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Running Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 849 M

Waterbody ID Number: 4

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
1	1-Jan-01	0.00	0.00	0.00		20	
2	2-Jan-01	0.00	0.00	0.00		20	
3	3-Jan-01	0.00	0.00	0.00		20	
4	4-Jan-01	0.00	0.00	0.00		20	
5	5-Jan-01	0.00	0.00	0.00		20	
6	6-Jan-01	0.00	0.00	0.00		20	
7	7-Jan-01	0.00	0.00	0.00		20	0.00
8	8-Jan-01	0.00	0.00	0.00		20	0.00
9	9-Jan-01	0.00	0.00	0.00		20	0.00
10	10-Jan-01	0.00	0.00	0.00		20	0.00
11	11-Jan-01	0.00	0.00	0.00		20	0.00
12	12-Jan-01	0.00	0.00	0.00		20	0.00
13	13-Jan-01	0.00	0.00	0.00		20	0.00
14	14-Jan-01	0.00	0.00	0.00		20	0.00
15	15-Jan-01	0.00	0.00	0.00		20	0.00
16	16-Jan-01	0.00	0.00	0.00		20	0.00
17	17-Jan-01	0.00	0.00	0.00		20	0.00
18	18-Jan-01	0.00	0.00	0.00		20	0.00
19	19-Jan-01	0.00	0.00	0.00		20	0.00
20	20-Jan-01	0.00	0.00	0.00		20	0.00
21	21-Jan-01	0.00	0.00	0.00		20	0.00
22	22-Jan-01	0.00	0.00	0.00		20	0.00
23	23-Jan-01	0.00	0.00	0.00		20	0.00
24	24-Jan-01	0.00	0.00	0.00		20	0.00
25	25-Jan-01	0.00	0.00	0.00		20	0.00
26	26-Jan-01	0.00	0.00	0.00		20	0.00
27	27-Jan-01	0.00	0.00	0.00		20	0.00
28	28-Jan-01	0.00	0.00	0.00		20	0.00
29	29-Jan-01	0.00	0.00	0.00		20	0.00
30	30-Jan-01	0.00	0.00	0.00		20	0.00
31	31-Jan-01	0.00	0.00	0.00		20	0.00
32	1-Feb-01	0.00	0.00	0.00		20	0.00
33	2-Feb-01	0.00	0.00	0.00		20	0.00
34	3-Feb-01	0.00	0.00	0.00		20	0.00
35	4-Feb-01	0.00	0.00	0.00		20	0.00
36	5-Feb-01	0.00	0.00	0.00		20	0.00
37	6-Feb-01	0.00	0.00	0.00		20	0.00
38	7-Feb-01	0.00	0.00	0.00		20	0.00
39	8-Feb-01	0.00	0.00	0.00		20	0.00
40	9-Feb-01	0.00	0.00	0.00		20	0.00
41	10-Feb-01	0.00	0.00	0.00		20	0.00
42	11-Feb-01	0.00	0.00	0.00		20	0.00
43	12-Feb-01	0.00	0.00	0.00		20	0.00
44	13-Feb-01	0.00	0.00	0.00		20	0.00
45	14-Feb-01	0.00	0.00	0.00		20	0.00
46	15-Feb-01	0.00	0.00	0.00		20	0.00
47	16-Feb-01	0.00	0.00	0.00		20	0.00

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt

Calibration Factor : 0.06

Idaho Cold Water Aquatic Life Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
22 °C Instantaneous	0	0%	
19 °C Average	3	3%	
Days Evaluated & Date Range	92	22-Jun	21-Sep

Idaho Salmonid Spawning Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Instantaneous Spring	26	28%	
9 °C Average Spring	39	42%	
Spring Days Eval'd w/in Dates	92	15-Apr	15-Jul
13 °C Instantaneous Fall	43	46%	
9 °C Average Fall	50	54%	
Fall Days Eval'd w/in Dates	93	15-Aug	15-Nov
13 °C Instantaneous Total *	69	37%	
9 °C Average Total *	89	48%	
Tot Days Eval'd w/in Both Dates *	185		
* If spring & fall dates overlap double counting may occur.			

Idaho Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prcnt	
13 °C Juvnl Rearing MWMT (J)	72	78%	
Juvenile Days Eval'd w/in Dates	92	1-Jun	31-Aug
9 °C Spawning Daily Ave (S)	33	54%	
Spawning Days Eval'd w/in Dates	61	1-Sep	31-Oct

NOTES

Comments: Combined data from two deployments. Stream is a priori natural. Monitored as state Outstanding Resource Water nominee. Less than 10% exceedance of Idaho's cold water aquatic life criteria during critical summer period.

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Running Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 849 M

Waterbody ID Number: 4

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S-spawn	Nbr of Msrmts per day	7-Day Average of High
48	17-Feb-01	0.00	0.00	0.00		20	0.00
49	18-Feb-01	0.00	0.00	0.00		20	0.00
50	19-Feb-01	0.00	0.00	0.00		20	0.00
51	20-Feb-01	0.00	0.00	0.00		20	0.00
52	21-Feb-01	0.00	0.00	0.00		20	0.00
53	22-Feb-01	0.00	0.00	0.00		20	0.00
54	23-Feb-01	0.00	0.00	0.00		20	0.00
55	24-Feb-01	0.00	0.00	0.00		20	0.00
56	25-Feb-01	0.00	0.00	0.00		20	0.00
57	26-Feb-01	0.00	0.00	0.00		20	0.00
58	27-Feb-01	0.00	0.00	0.00		20	0.00
59	28-Feb-01	0.00	0.00	0.00		20	0.00
60	1-Mar-01	0.00	0.00	0.00		20	0.00
61	2-Mar-01	0.00	0.00	0.00		20	0.00
62	3-Mar-01	0.00	0.00	0.00		20	0.00
63	4-Mar-01	0.00	0.00	0.00		20	0.00
64	5-Mar-01	0.00	0.00	0.00		20	0.00
65	6-Mar-01	0.16	0.00	0.06		20	0.02
66	7-Mar-01	0.81	0.00	0.39		20	0.14
67	8-Mar-01	1.12	0.00	0.54		20	0.30
68	9-Mar-01	1.12	0.48	0.77		20	0.46
69	10-Mar-01	2.23	0.65	1.34		20	0.78
70	11-Mar-01	1.92	1.44	1.72		20	1.05
71	12-Mar-01	2.71	1.60	2.07		20	1.44
72	13-Mar-01	3.50	1.92	2.69		20	1.92
73	14-Mar-01	3.03	1.76	2.39		20	2.23
74	15-Mar-01	2.55	0.65	1.76		20	2.44
75	16-Mar-01	2.71	1.60	2.17		20	2.66
76	17-Mar-01	3.03	1.44	2.21		20	2.78
77	18-Mar-01	4.12	2.40	3.17		20	3.09
78	19-Mar-01	3.81	2.87	3.36		20	3.25
79	20-Mar-01	3.97	1.44	2.88		20	3.32
80	21-Mar-01	3.81	1.44	2.76		20	3.43
81	22-Mar-01	3.97	1.28	2.72		20	3.63
82	23-Mar-01	4.59	1.60	3.13		20	3.90
83	24-Mar-01	5.06	2.71	3.84		20	4.19
84	25-Mar-01	3.97	2.55	3.06		20	4.17
85	26-Mar-01	3.81	2.55	3.10		20	4.17
86	27-Mar-01	4.59	2.40	3.42		20	4.26
87	28-Mar-01	4.90	3.35	4.10		20	4.41
88	29-Mar-01	5.68	3.66	4.64		20	4.66
89	30-Mar-01	5.21	3.97	4.54		20	4.75
90	31-Mar-01	4.43	2.71	3.49		20	4.66
91	1-Apr-01	5.83	3.18	4.25		19	4.92
92	2-Apr-01	5.52	3.66	4.15		20	5.17
93	3-Apr-01	4.59	2.40	3.43		20	5.17
94	4-Apr-01	4.90	3.03	3.90		20	5.17
95	5-Apr-01	4.90	2.23	3.71		20	5.05
96	6-Apr-01	4.90	2.71	3.71		20	5.01
97	7-Apr-01	4.43	3.35	4.01		20	5.01

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt
Calibration Factor : 0.06

STATISTICS	
Maximum Daily Maximum (MDM)	21.9 °C
Maximum 7-Day Maximum (MWM)	20.6 °C
Maximum Daily Average (MDA)	19.8 °C
Maximum 7-Day Average (MWA)	18.8 °C
Mean Daily Maximum	7.9 °C
Mean Daily Average	6.9 °C
Mean Daily Minimum	5.9 °C
Minimum 7-Day Minimum	0.0 °C
Minimum Daily Minimum	0.0 °C
Mean of all Data	6.9 °C

EPA Bull Trout Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
10 °C 7-Day Avg of Daily Max	116	95%	
Nmbr of 7-Day Avg's w/in Dates	122	1-Jun	30-Sep

Seasonal Cold Water Criteria Exceedance Summary			
Criteria	Exceedance Counts		
	Nmbr	Prct	
26 °C Instantaneous	0	0%	
23 °C Average	0	0%	
Days Evaluated and Date Range	92	22-Jun	21-Sep

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Running Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 849 M

Waterbody ID Number: 4

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
98	8-Apr-01	4.28	2.71	3.41		20	4.79
99	9-Apr-01	4.12	2.55	3.36		20	4.59
100	10-Apr-01	4.75	2.71	3.72		20	4.61
101	11-Apr-01	4.59	3.18	3.90		20	4.57
102	12-Apr-01	4.59	3.03	3.76		20	4.52
103	13-Apr-01	4.43	3.03	3.77		20	4.46
104	14-Apr-01	5.37	3.03	4.11		20	4.59
105	15-Apr-01	6.15	2.71	4.46		20	4.86
106	16-Apr-01	6.46	3.50	5.07		20	5.19
107	17-Apr-01	8.16	4.43	6.26		20	5.68
108	18-Apr-01	7.86	5.37	6.50		20	6.15
109	19-Apr-01	6.93	5.06	6.00		20	6.48
110	20-Apr-01	5.83	3.81	4.75		20	6.68
111	21-Apr-01	5.83	3.97	4.88		20	6.75
112	22-Apr-01	6.15	3.97	5.07		20	6.75
113	23-Apr-01	6.93	4.90	5.82		20	6.81
114	24-Apr-01	9.39	5.52	7.17		20	6.99
115	25-Apr-01	9.08	5.52	7.36		20	7.16
116	26-Apr-01	8.16	5.06	6.75		20	7.34
117	27-Apr-01	7.55	4.90	6.11		20	7.58
118	28-Apr-01	6.15	4.12	5.14		20	7.63
119	29-Apr-01	5.68	3.81	4.77		20	7.56
120	30-Apr-01	5.52	4.59	5.10		20	7.36
121	1-May-01	5.21	3.50	4.29		20	6.76
122	2-May-01	5.52	3.03	4.15		20	6.26
123	3-May-01	7.08	3.03	4.83		20	6.10
124	4-May-01	8.16	3.97	5.96		20	6.19
125	5-May-01	7.40	5.52	6.28		20	6.37
126	6-May-01	7.24	3.35	5.18		20	6.59
127	7-May-01	8.01	3.81	5.85		20	6.95
128	8-May-01	8.16	5.06	6.76		20	7.37
129	9-May-01	8.01	5.21	6.80		20	7.72
130	10-May-01	8.32	5.06	6.71		20	7.90
131	11-May-01	8.32	4.59	6.50		20	7.92
132	12-May-01	8.77	5.06	6.91		20	8.12
133	13-May-01	8.16	5.83	6.84		20	8.25
134	14-May-01	7.24	5.21	6.31		20	8.14
135	15-May-01	6.93	5.52	6.22		20	7.96
136	16-May-01	6.62	5.68	6.08		20	7.77
137	17-May-01	7.40	3.97	5.62		20	7.63
138	18-May-01	7.70	5.83	6.75		20	7.55
139	19-May-01	8.47	4.90	6.67		20	7.50
140	20-May-01	8.32	6.31	7.31		20	7.53
141	21-May-01	8.62	4.28	6.42		20	7.72
142	22-May-01	10.17	5.68	7.82		20	8.19
143	23-May-01	10.80	6.31	8.51		20	8.78
144	24-May-01	9.86	6.62	8.44		20	9.13
145	25-May-01	10.33	7.24	8.75		20	9.51
146	26-May-01	10.48	7.08	8.75		20	9.80
147	27-May-01	9.86	7.70	8.92		20	10.02
148	28-May-01	10.80	7.40	9.12		20	10.33

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt

Calibration Factor : 0.06

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Running Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 849 M

Waterbody ID Number: 4

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
149	29-May-01	10.33	7.55	8.86		20	10.35
150	30-May-01	9.55	5.37	7.39		20	10.17
151	31-May-01	12.34	8.01	9.78		20	10.53
152	1-Jun-01	11.56	8.16	10.05		20	10.70
153	2-Jun-01	11.41	9.24	10.25		20	10.84
154	3-Jun-01	9.86	6.77	7.98		20	10.84
155	4-Jun-01	6.46	4.28	5.18		20	10.22
156	5-Jun-01	7.08	5.06	5.94		20	9.75
157	6-Jun-01	9.55	6.46	7.64		20	9.75
158	7-Jun-01	8.93	6.77	7.72		20	9.26
159	8-Jun-01	11.26	7.24	9.05		20	9.22
160	9-Jun-01	12.18	9.24	10.62		20	9.33
161	10-Jun-01	11.41	9.08	10.34		20	9.55
162	11-Jun-01	10.80	8.93	9.99		20	10.17
163	12-Jun-01	9.86	6.93	8.33		20	10.57
164	13-Jun-01	6.77	5.37	6.07		20	10.17
165	14-Jun-01	8.47	6.15	7.17		20	10.11
166	15-Jun-01	11.72	7.40	9.08		20	10.17
167	16-Jun-01	12.50	7.70	9.96		20	10.22
168	17-Jun-01	12.50	9.55	11.10		20	10.37
169	18-Jun-01	12.65	8.93	10.77		20	10.64
170	19-Jun-01	12.96	8.16	10.43		20	11.08
171	20-Jun-01	14.04	9.08	11.35		20	12.12
172	21-Jun-01	15.61	10.48	12.81	J	20	13.14
173	22-Jun-01	16.72	11.87	14.06	J	20	13.85
174	23-Jun-01	16.72	12.81	14.66	J	20	14.46
175	24-Jun-01	15.46	12.81	14.23	J	20	14.88
176	25-Jun-01	15.30	11.72	13.36	J	20	15.26
177	26-Jun-01	16.25	12.18	13.97	J	20	15.73
178	27-Jun-01	16.09	12.96	14.40	J	20	16.02
179	28-Jun-01	16.88	13.27	14.86	J	20	16.20
180	29-Jun-01	18.16	12.96	15.36	J	20	16.41
181	30-Jun-01	17.52	13.88	15.76	J	20	16.52
182	1-Jul-01	19.30	14.20	16.56	J	20	17.07
183	2-Jul-01	19.78	14.82	17.24	J	20	17.71
184	3-Jul-01	20.10	15.14	17.63	J	20	18.26
185	4-Jul-01	18.97	16.09	17.12	J	20	18.67
186	5-Jul-01	17.20	15.61	16.23	J	20	18.72
187	6-Jul-01	18.81	13.88	16.06	J	20	18.81
188	7-Jul-01	17.68	14.35	16.28	J	20	18.83
189	8-Jul-01	18.16	15.30	16.79	J	20	18.67
190	9-Jul-01	19.13	15.93	17.33	J	20	18.58
191	10-Jul-01	21.08	16.25	18.56	J	20	18.72
192	11-Jul-01	19.94	16.09	18.01	J	20	18.86
193	12-Jul-01	18.97	15.93	17.45	J	20	19.11
194	13-Jul-01	18.00	15.14	16.50	J	20	18.99
195	14-Jul-01	19.62	14.35	16.87	J	20	19.27
196	15-Jul-01	19.13	16.41	17.32	J	20	19.41
197	16-Jul-01	16.25	14.20	14.86	J	20	19.00

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt
Calibration Factor : 0.06

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Running Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 849 M

Waterbody ID Number: 4

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
198	17-Jul-01	15.77	12.34	13.96	J	20	18.24
199	18-Jul-01	16.25	13.12	14.56	J	20	17.71
200	19-Jul-01	18.48	13.27	15.80	J	20	17.64
201	20-Jul-01	18.48	14.82	16.76	J	20	17.71
202	21-Jul-01	18.81	14.82	16.89	J	20	17.60
203	22-Jul-01	19.62	15.30	17.59	J	20	17.67
204	23-Jul-01	19.62	14.82	17.35	J	20	18.15
205	24-Jul-01	19.30	14.82	17.30	J	20	18.65
206	25-Jul-01	20.26	15.61	18.03	J	20	19.22
207	26-Jul-01	20.26	15.61	18.13	J	20	19.48
208	27-Jul-01	20.42	15.46	18.15	J	20	19.76
209	28-Jul-01	19.30	16.09	17.73	J	20	19.83
210	29-Jul-01	17.52	14.51	16.22	J	20	19.53
211	30-Jul-01	15.93	14.04	14.64	J	20	19.00
212	31-Jul-01	14.20	12.18	13.18	J	20	18.27
213	1-Aug-01	16.41	11.41	13.64	J	20	17.72
214	2-Aug-01	18.81	13.58	16.03	J	20	17.51
215	3-Aug-01	18.48	14.98	16.98	J	20	17.24
216	4-Aug-01	18.65	15.61	17.13	J	20	17.14
217	5-Aug-01	19.94	14.98	17.50	J	20	17.49
218	6-Aug-01	20.75	15.93	18.51	J	20	18.18
219	7-Aug-01	21.25	16.88	19.23	J	20	19.18
220	8-Aug-01	21.92	17.52	19.81	J	20	19.97
221	9-Aug-01	20.26	16.72	18.80	J	20	20.18
222	10-Aug-01	20.42	16.25	18.44	J	20	20.46
223	11-Aug-01	19.46	16.09	18.07	J	20	20.57
224	12-Aug-01	20.42	15.77	18.11	J	20	20.64
225	13-Aug-01	20.59	17.68	19.31	J	20	20.62
226	14-Aug-01	20.75	17.04	18.97	J	20	20.55
227	15-Aug-01	20.59	16.57	18.80	J	20	20.36
228	16-Aug-01	20.42	16.25	18.51	J	20	20.38
229	17-Aug-01	20.10	16.09	18.27	J	20	20.33
230	18-Aug-01	20.59	17.04	18.79	J	20	20.49
231	19-Aug-01	19.46	15.93	17.93	J	20	20.36
232	20-Aug-01	18.65	14.82	16.89	J	20	20.08
233	21-Aug-01	18.65	14.66	16.70	J	20	19.78
234	22-Aug-01	17.84	14.51	16.48	J	20	19.39
235	23-Aug-01	18.16	14.98	16.66	J	20	19.06
236	24-Aug-01	18.97	15.77	17.13	J	20	18.90
237	25-Aug-01	18.65	14.51	16.60	J	20	18.63
238	26-Aug-01	18.97	14.82	16.90	J	20	18.56
239	27-Aug-01	19.46	15.46	17.40	J	20	18.67
240	28-Aug-01	19.28	15.77	17.55	J	20	18.76
241	29-Aug-01	18.96	14.49	16.81	J	20	18.92
242	30-Aug-01	18.80	14.49	16.65	J	20	19.01
243	31-Aug-01	18.80	15.13	16.97	J	20	18.99
244	1-Sep-01	18.31	14.81	16.57		S	18.94
245	2-Sep-01	18.31	14.81	16.60		S	18.85
246	3-Sep-01	18.96	15.13	17.00		S	18.77

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt

Calibration Factor : 0.06

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Running Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 849 M

Waterbody ID Number: 4

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
247	4-Sep-01	17.03	15.13	16.36	S	20	18.45
248	5-Sep-01	17.51	14.81	16.06	S	20	18.25
249	6-Sep-01	15.29	12.95	14.32	S	20	17.74
250	7-Sep-01	13.87	11.86	12.62	S	20	17.04
251	8-Sep-01	13.26	9.53	11.44	S	20	16.32
252	9-Sep-01	13.56	9.69	11.67	S	20	15.64
253	10-Sep-01	14.49	10.78	12.58	S	20	15.00
254	11-Sep-01	15.13	11.55	13.33	S	20	14.73
255	12-Sep-01	14.97	12.17	13.65	S	20	14.37
256	13-Sep-01	16.24	13.87	14.99	S	20	14.50
257	14-Sep-01	17.67	14.33	15.86	S	20	15.05
258	15-Sep-01	16.71	13.87	15.43	S	20	15.54
259	16-Sep-01	16.24	13.26	14.82	S	20	15.92
260	17-Sep-01	16.08	13.56	14.80	S	20	16.15
261	18-Sep-01	15.29	12.32	13.99	S	20	16.17
262	19-Sep-01	14.18	11.70	12.97	S	20	16.06
263	20-Sep-01	12.95	10.31	11.78	S	20	15.59
264	21-Sep-01	12.48	10.16	11.32	S	20	14.85
265	22-Sep-01	12.48	9.53	11.05	S	20	14.24
266	23-Sep-01	13.26	10.31	11.78	S	20	13.82
267	24-Sep-01	13.87	10.93	12.31	S	20	13.50
268	25-Sep-01	13.56	11.23	12.52	S	20	13.25
269	26-Sep-01	14.02	11.55	12.83	S	20	13.23
270	27-Sep-01	13.56	11.39	12.57	S	20	13.32
271	28-Sep-01	13.71	11.86	12.76	S	20	13.49
272	29-Sep-01	13.10	11.08	12.25	S	20	13.58
273	30-Sep-01	12.32	10.31	11.45	S	20	13.45
274	1-Oct-01	11.70	9.53	10.77	S	20	13.14
275	2-Oct-01	11.23	9.53	10.42	S	20	12.81
276	3-Oct-01	10.47	8.61	9.64	S	20	12.30
277	4-Oct-01	9.38	7.52	8.60		20	11.70
278	5-Oct-01	7.99	5.82	6.98		20	10.88
279	6-Oct-01	7.21	5.04	6.19		20	10.04
280	7-Oct-01	7.99	5.97	6.98		20	9.42
281	8-Oct-01	8.91	7.52	8.18		20	9.03
282	9-Oct-01	8.14	7.21	7.74		20	8.58
283	10-Oct-01	7.99	5.97	7.01		20	8.23
284	11-Oct-01	7.68	7.06	7.34		20	7.99
285	12-Oct-01	7.06	5.82	6.34		20	7.85
286	13-Oct-01	7.37	5.97	6.57		20	7.88
287	14-Oct-01	7.21	6.75	6.95		20	7.77
288	15-Oct-01	7.21	5.66	6.38		20	7.52
289	16-Oct-01	6.44	4.41	5.57		20	7.28
290	17-Oct-01	7.37	6.13	6.63		20	7.19
291	18-Oct-01	6.60	4.73	5.58		20	7.04
292	19-Oct-01	6.91	5.66	6.17		20	7.02
293	20-Oct-01	7.68	6.91	7.31		20	7.06
294	21-Oct-01	7.21	5.04	5.95		20	7.06
295	22-Oct-01	6.44	5.66	6.07		20	6.95
296	23-Oct-01	6.44	5.66	5.94		20	6.95

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt
Calibration Factor : 0.06

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Running Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 849 M

Waterbody ID Number: 4

Dbase Day Count	Date of Measurement	High Temp	Low Temp	Average Temp	BullExcd J juvnl S- spawn	Nbr of Msr mts per day	7-Day Averag e of High
297	24-Oct-01	5.35	4.26	4.67		20	6.66
298	25-Oct-01	4.73	3.63	4.06		20	6.39
299	26-Oct-01	3.79	2.37	2.99		20	5.95
300	27-Oct-01	3.63	1.90	2.84		20	5.37
301	28-Oct-01	5.97	3.79	4.99		21	5.19
302	29-Oct-01	6.44	5.51	5.94		20	5.19
303	30-Oct-01	6.91	6.28	6.57		20	5.26
304	31-Oct-01	7.21	6.44	6.87		20	5.53
305	1-Nov-01	6.75	5.82	6.32		20	5.81
306	2-Nov-01	6.91	5.82	6.32		20	6.26
307	3-Nov-01	6.28	5.04	5.49		20	6.64
308	4-Nov-01	4.73	3.16	3.65		20	6.46
309	5-Nov-01	4.41	2.53	3.22		20	6.17
310	6-Nov-01	5.35	3.79	4.56		20	5.95
311	7-Nov-01	5.04	3.16	4.12		20	5.64
312	8-Nov-01	2.85	1.10	1.59		20	5.08
313	9-Nov-01	1.10	0.14	0.48		20	4.25
314	10-Nov-01	0.62	-0.02	0.15		20	3.44
315	11-Nov-01	0.78	-0.02	0.22		20	2.88
316	12-Nov-01	1.74	0.62	1.08		20	2.50
317	13-Nov-01	2.69	1.42	2.00		20	2.12
318	14-Nov-01	3.63	2.53	3.02		20	1.92
319	15-Nov-01	3.32	2.53	2.97		20	1.98
320	16-Nov-01	3.95	2.69	3.35		20	2.39
321	17-Nov-01	4.26	3.63	3.93		20	2.91
322	18-Nov-01	4.73	4.10	4.34		20	3.47
323	19-Nov-01	3.95	2.69	3.18		20	3.79
324	20-Nov-01	3.95	2.85	3.34		20	3.97
325	21-Nov-01	4.88	3.95	4.32		20	4.15
326	22-Nov-01	4.57	3.95	4.27		20	4.33
327	23-Nov-01	4.41	3.95	4.22		20	4.39
328	24-Nov-01	3.79	2.22	2.81		20	4.33
329	25-Nov-01	2.22	1.58	1.97		20	3.97
330	26-Nov-01	2.06	1.58	1.83		20	3.70
331	27-Nov-01	1.90	0.78	1.41		20	3.40
332	28-Nov-01	0.62	-0.02	0.03		20	2.80
333	29-Nov-01	0.14	-0.02	0.00		20	2.16
334	30-Nov-01	0.46	-0.02	0.15		20	1.60
335	1-Dec-01	0.78	0.14	0.45		20	1.17
336	2-Dec-01	0.78	-0.02	0.45		20	0.96
337	3-Dec-01	1.10	0.30	0.74		20	0.83
338	4-Dec-01	0.78	-0.02	0.13		20	0.67
339	5-Dec-01	-0.02	-0.02	-0.02		20	0.57
340	6-Dec-01	-0.02	-0.02	-0.02		20	0.55
341	7-Dec-01	0.30	-0.02	0.02		20	0.53
342	8-Dec-01	-0.02	-0.02	-0.02		20	0.41
343	9-Dec-01	-0.02	-0.02	-0.02		20	0.30
344	10-Dec-01	-0.02	-0.02	-0.02		20	0.14
345	11-Dec-01	-0.02	-0.02	-0.02		20	0.03
346	12-Dec-01	-0.02	-0.02	-0.02		20	0.03
347	13-Dec-01	-0.02	-0.02	-0.02		20	0.03

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt
Calibration Factor : 0.06

DEQ Summary of Temperature Data

Data Source: DEQ

Water Body: Selway River abv Running Cr.

Data Collection Site: upstream end of reach

Data Period: 1/1/01 - 12/31/01

HUC4 Number: 17060301

HUC4 Name: Upper Selway

North of the Salmon Clearwater Divide

Idaho Bull Trout Elevation: 849 M

Waterbody ID Number: 4

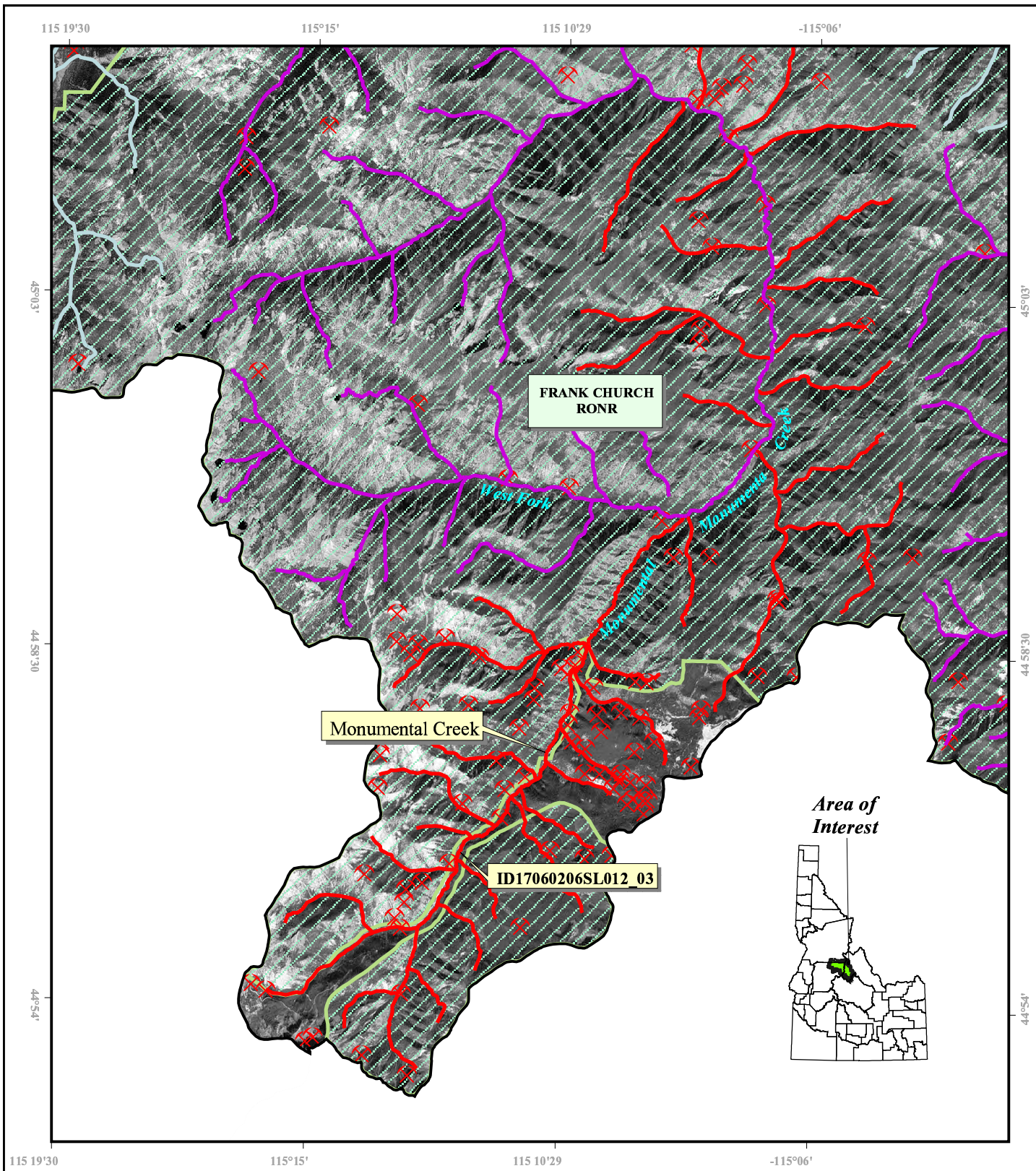
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349	15-Dec-01	-0.02	-0.02	-0.02		20	-0.02
350	16-Dec-01	-0.02	-0.02	-0.02		20	-0.02
351	17-Dec-01	-0.02	-0.02	-0.02		20	-0.02
352	18-Dec-01	-0.02	-0.02	-0.02		20	-0.02
353	19-Dec-01	-0.02	-0.02	-0.02		20	-0.02
354	20-Dec-01	-0.02	-0.02	-0.02		20	-0.02
355	21-Dec-01	-0.02	-0.02	-0.02		20	-0.02
356	22-Dec-01	-0.02	-0.02	-0.02		20	-0.02
357	23-Dec-01	-0.02	-0.02	-0.02		20	-0.02
358	24-Dec-01	-0.02	-0.02	-0.02		20	-0.02
359	25-Dec-01	-0.02	-0.02	-0.02		20	-0.02
360	26-Dec-01	0.14	-0.02	0.01		20	0.00
361	27-Dec-01	-0.02	-0.02	-0.02		20	0.00
362	28-Dec-01	-0.02	-0.02	-0.02		20	0.00
363	29-Dec-01	-0.02	-0.02	-0.02		20	0.00
364	30-Dec-01	-0.02	-0.02	-0.02		20	0.00
365	31-Dec-01	-0.02	-0.02	-0.02		20	0.00

Import File : ... Selway 2001\Selway abv Running Cr 2001.txt

Calibration Factor : 0.06

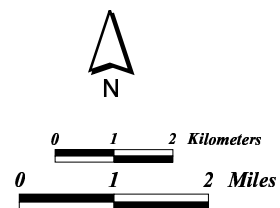
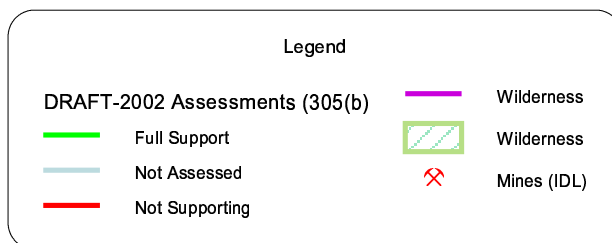
Appendix B.

Monumental Creek Lower Middle Fork Salmon



Monumental Creek **Lower Middle Fork Salmon** **17060206**

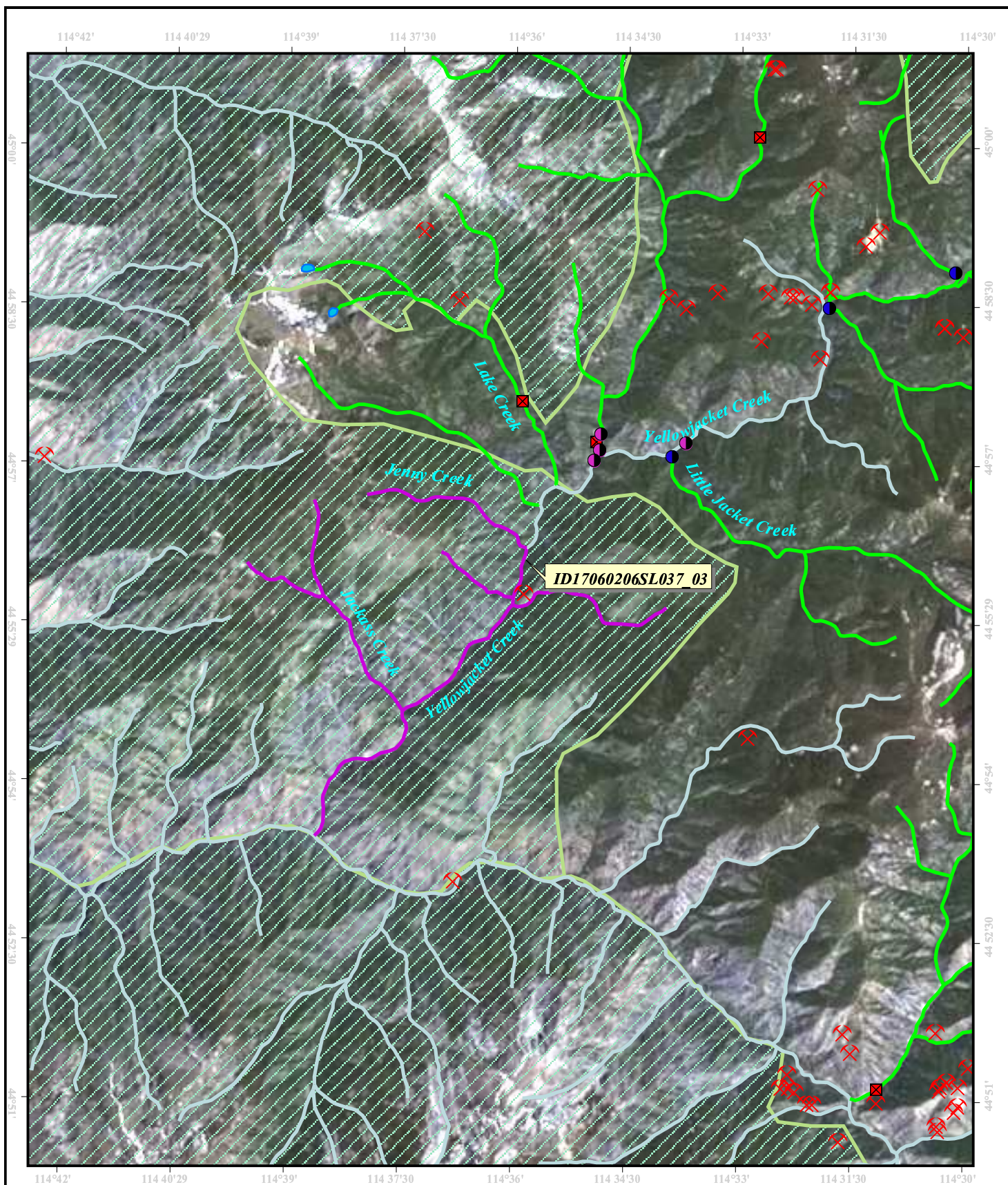
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December 5, 2003

Appendix C.

Yellowjacket Creek Lower Middle Fork Salmon



Yellowjacket Creek **Lower Middle Fork Salmon** **17060206**

Legend

DRAFT-2002 Assessments (305(b))	Wilderness
Full Support	Mines (IDL)
Not Assessed	Wilderness
Not Supporting	

